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In The
Supreme Court of the United States
OCTOBER TERM, 1979

No. **78-1831**

HESSTON CORPORATION,

Petitioner,

vs.

DEERE & COMPANY,

Respondent.

**PETITION FOR A WRIT OF CERTIORARI TO THE
UNITED STATES COURT OF APPEALS
FOR THE TENTH CIRCUIT**

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INDEX

Opinions Below	1
Jurisdiction	2
Questions Presented	2
Introductory Statement	4
Constitutional Provision and Statutes Involved	4
Statement of the Case	5
The Case Involves Thirty-Five Claims of Eight Patents	5
The Patent Claims in Issue Define the Inventions in Terms of Machine and Method	5
Initial Trial and Error Failures Ended in an Un- successful Abandoned Experiment	6
The Patent Claims in Issue Reject the Prior Fail- ures and Cover Only the Successful Solutions	8
The Opinion of the District Court	9
The Opinion of the Court of Appeals	10
Reasons for Granting the Writ	12
As to Synergism	12
As to Experimental Use and Sale	15
The New Approach	15
Rejection of New Theory and Rule	16
As to Examination of Separate Claims	19
Conclusion	22
Appendix—	
Judgment of the District Court	A1
Opinion of the District Court	A2

Decision of the Court of Appeals	A26
Judgment of the Court of Appeals	A48
Patent Claims at Issue	A49
Chapter 706 of the Manual of Patent Examining Procedure	A58
Herschensohn, et al. v. Hoffman, et al., No. 77-1718 and No. 77-2638 (9th Cir. 1979)	A63
Reinke Manufacturing Company, Inc. v. Sidney Manufacturing Corporation, No. 78-1341 and No. 78-1301 (8th Cir. 1979)	A75
Constitutional and Statutory Provisions	A93

Citations

CASES

<i>Altoona Publix Theatres, Inc. v. American Tri-Ergon Corp.</i> , 294 U.S. 477, 55 S.Ct. 455, 79 L.Ed. 1005 (1935)	19, 20
<i>American Machine & Hydraulics, Inc.</i> , 585 F.2d 404 (9th Cir. 1978)	18
<i>Anderson's-Black Rock, Inc. v. Pavement Salvage Co., Inc.</i> , 396 U.S. 57, 90 S.Ct. 305, 24 L.Ed.2d 258 (1969)	14
<i>Austin v. Marco Dental Products, Inc.</i> , 560 F.2d 966, 969 (9th Cir. 1977)	18
<i>B.G. Corp. v. Walter Kidde & Co.</i> , 79 F.2d 20 (2nd Cir. 1935)	21
<i>City of Elizabeth v. American Nicholson Pavement Co.</i> , 97 U.S. 126, 24 L.Ed. 1000 (1878)	15, 16, 17, 18
<i>Clark Equipment Company, et al. v. Keller</i> , 570 F.2d 778 (8th Cir. 1978)	13
<i>Coffin v. Ogden</i> , 85 U.S. (18 Wall. 120-125) (1874)	15
<i>Dart Industries, Inc. v. E. I. Dupont De Nemours and Co.</i> , 489 F.2d 1359 (7th Cir. 1973)	18

<i>Electric Storage Battery v. Shimadzu</i> , 307 U.S. 5, 83 L. Ed. 1071 (1939)	15
<i>Graham v. Deere</i> , 383 U.S. 1, 86 S.Ct. 684, 15 L.Ed.2d 545 (1966)	4, 12, 19, 20
<i>Herschensohn, et al. v. Hoffman, et al.</i> , No. 77-1718 and No. 77-2638 (9th Cir. 1979)	12, 13
<i>McCullough Tool Company v. Wells Surveys, Inc.</i> , 343 F.2d 381 (10th Cir. 1965)	19
<i>Merrill v. Builders Ornamental Iron Company</i> , 197 F.2d 16 (10th Cir. 1952)	19
<i>Reckendorfer v. Faber</i> , 92 U.S. 347, 23 L.Ed. 719 (1876)	21
<i>Red Cross Manufacturing Corp. v. Toro Sales</i> , 525 F.2d 1135 (9th Cir. 1975)	18
<i>Reeves Instrument Corp. v. Beckman Instruments, Inc.</i> , 444 F.2d 263 (9th Cir. 1971)	20
<i>Reiner v. I. Leon Co.</i> , 285 F.2d 501 (2nd Cir. 1960)	20
<i>Reinke Manufacturing Co., Inc. v. Sidney Manufactur- ing Corp.</i> , No. 78-1341 and No. 78-1301 (8th Cir. 1979)	13
<i>Republic Industries, Inc. v. Schlage Lock Co.</i> , 592 F.2d 963 (7th Cir. 1979)	12, 14
<i>Robbins Co. v. Lawrence Manufacturing Co.</i> , 482 F.2d 426 (9th Cir. 1973)	10, 15-16, 18
<i>Sakraida v. Ag Pro, Inc.</i> , 425 U.S. 273, 96 S.Ct. 1532, 47 L.Ed.2d 784 (1976)	10-11, 14
<i>Smith & Griggs Manufacturing Co. v. Sprague</i> , 123 U.S. 249, 8 S.Ct. 122, 31 L.Ed. 141 (1887)	15
<i>United States v. Adams</i> , 383 U.S. 39, 86 S.Ct. 708, 15 L.Ed.2d 572 (1966)	13, 14
<i>Universal Marion Corp. v. Warner & Swasey Co.</i> , 354 F.2d 541 (10th Cir. 1965)	19
<i>Yarn Processing Patent Validity Litigation, In re</i> , 498 F.2d 271 (5th Cir. 1974)	16, 17, 18

CONSTITUTIONAL PROVISIONS AND STATUTES

U.S. Constitution, Article I, Section 8, Clause 8	4
28 U.S.C. § 1254(1)	2
28 U.S.C. § 1338(a)	2
28 U.S.C. § 2201	2
Patent Code of 1952, 35 U.S.C. §§ 101-103, 112	2, 3,
	10, 11, 20, 21

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Petitioner, Hesston Corporation, prays that a Writ of Certiorari issue to review the judgment of the United States Court of Appeals for the Tenth Circuit in the above-entitled case.

OPINIONS BELOW

The opinion of the District Court for the District of Utah, Central Division is reported at 456 F. Supp. 520, and is reprinted in the Appendix at p. A2, *infra*. The decision of the Court of Appeals is reported at 593 F.2d 956 and is reprinted in the Appendix, at p. A26, *infra*. The judgment of the District Court was filed May 4, 1977 (Appendix, p. A1, *infra*). The judgment of the Court of Appeals was entered on March 9, 1979 (Appendix, p. A48, *infra*).

JURISDICTION

The jurisdiction of this Court is invoked pursuant to 28 U.S.C. § 1254(1). The basis of jurisdiction in the District Court was 28 U.S.C. §§ 1338(a) and 2201.

QUESTIONS PRESENTED

This Petition is limited to three important legal issues, each of which involves directly opposite viewpoints and distinct conflicts among the Courts of Appeal:

1. Where, after conceding petitioner's eight mechanical patents relating to a loose hay stacking wagon define novel combinations producing a "striking result", whether or not the Court of Appeals was correct in ruling that the patents are invalid for failure to produce a synergistic effect, thus further magnifying the conflict that exists among the circuits as to whether or not, in addition to novelty, utility and nonobviousness as prescribed by 35 U.S.C. §§ 101, 102 and 103, a patentee must meet a fourth, non-statutory condition of patentability based on synergism, where performance of the elements, after they have been combined, has become the focal point of inquiry, rather than the obviousness or nonobviousness of making the combination.

2. Whether or not the Court of Appeals for the Tenth Circuit legally invalidated the entire series of thirty-five patent claims at issue under the provisions of 35 U.S.C. § 102(b), precluding the right to patent protection if the invention was in public use or on sale more than one year prior to the date of the patent application, by holding a machine, advertised and sold in an incomplete stage, to be prior art according to a new rigid approach by the Ninth

Circuit, conflicting with the rule of this Court and the Fifth Circuit that the seller's intent must be considered, in view of the following circumstances:

- (a) sale of a single, substantially incomplete machine with a bona fide, good faith intent of experimental use;
- (b) abandonment of the machine as unsatisfactory without its ever having been completed;
- (c) refund of the purchase price by the seller;
- (d) the machine failing to consist of a finished, working embodiment in objective form as a reduction to practice of the invention of any of the patent claims;
- (e) the machine being limited to an attempt to carry out, in a particular manner, only a single step in the overall operation of the inventive concept, not thereafter included in the patent claims at issue;
- (f) abandonment of that particular manner of performing the single step contemplated by the original concept;
- (g) the machine representing an incomplete stage of development such that the patented inventions, as claimed, were not as yet functional for public use purposes; and
- (h) a subsequent requirement for substantial and lengthy experimentation before reduction to practice became a reality.

3. Whether or not the patents in suit were legally invalidated, without examination of the separate claims, by treating the inventions as mere combinations of functions, in view of the statutory requirement of 35 U.S.C. § 112 that the inventions of all patents are to be defined solely by

their claims, expressed as specified elements or steps capable of producing certain results, where all the claims at issue are, in fact, directed to combinations of clear, distinct, well-defined elements and steps.

INTRODUCTORY STATEMENT

This case stands as a classic example of the considerable diversity of opinion existing in the district courts and in the courts of appeals as to the proper interpretation of the decisions of this Court in several important areas relating to validity of patents. While, to some extent, the courts have referred to the tests laid down thirteen years ago in *Graham v. Deere*, 383 U.S. 1, 16, 15 L.Ed.2d 545, 556, 86 S.Ct. 684 (1966), the principle of nationwide uniformity of patent decisions continues to seriously deteriorate as the result of distinct conflicts arising from uncertainties in legal concepts relating both directly and indirectly to those tests and the proper manner of their application.

We shall show in this petition that this case furnishes an ideal opportunity for this Court, by granting certiorari, to lend its assistance once again to the current confusion developed as the result of substantially different and opposite viewpoints of the meaning of both statutory and case law dealing with patentability of inventions.

CONSTITUTIONAL PROVISION AND STATUTES INVOLVED

This case involves Clause 8 of Section 8 of the Constitution of the United States and Sections 101, 102, 103 and 112 of Title 35 of the United States Code (Appendix, commencing at p. A49, *infra*).

STATEMENT OF THE CASE

The Case Involves Thirty-five Claims of Eight Patents

The opinion of the District Court is limited simply to identification of the patent claims in issue by number (Appendix, pp. A3, 4, *infra*) and the opinion of the Court of Appeals does not go beyond identification by number of each patent in suit (Appendix, p. A28, *infra*). The claims themselves are not reproduced and no significant reference is made to any of the claims in either opinion, much less their contents, limitations and coverage. The claims are, therefore, necessarily reprinted in the Appendix commencing at p. A49, *infra*.

The Patent Claims in Issue Define the Inventions in Terms of Machine and Method

Briefly outlined, the patented inventions relate to the hay stacking art, employing a time, labor and cost saving, agricultural implement used by farmers and ranchers. The large, untied, outdoor, movable, weather resistant, machine-made stacks produced by the inventions had never before been seen or known by mankind. The implement is advanced through the field of long loose hay previously raked into windrows. By automatic operation, the machine picks up the hay out of the windrow and raises it well above ground level. The hay is continuously discharged rearwardly, fed into a stack-forming receptacle and layered evenly therein. The operation continues without interruption until the receptacle is filled, whereupon advancement is stopped briefly while the collected hay is packed downwardly against the bed of the machine and shaped into stack-form.

The steps are repeated until a large compact stack of proper configuration and uniform density is completely formed in the field off the ground in a short period of time without need for manual labor. The machine then serves the additional purpose of hauling the stack to a point of off loading, at which time the rear end of the receptacle is opened and the stack is forced outwardly for deposit on the ground. The only workman involved throughout is the driver who never needs to leave the tractor used to place the mobile stacker in tow. The critical steps of effecting proper layering, distribution, density and formation, as required, result in stacks capable of withstanding outside storage under the severest of weather conditions without need for tying.

Initial Trial and Error Failures Ended in an Unsuccessful Abandoned Experiment

While the mental concept of field stacking within a wagon originated with Cordell Lundahl as early as 1964, inasmuch as his initial ideas, vague and generalized as they were, presented many complex problems, long and difficult experimentation was required before Hesston was able, five years later, to commence production of the first commercially practical machine. The critical requirements of the concept were never developed by Lundahl beyond the talking stage.

The basic difficulty arose from the fact that Lundahl thought in terms of compressing the hay horizontally in a ram-like manner the same as he understood the operation of an ordinary hay baler. It was not until Hesston entered the program after mid-1966 that failure was finally turned into success by Hesston through conception and development of an altogether different approach. Hesston's work demonstrated that formation of large stacks while advancing

through the field was an entirely new art, vastly different in principle and in challenge from traditional production of small bales, hay cocks, bunches or handmade stacks.

Long prior to commencement of steps needed for commercial production and marketing of the inventions ultimately patented, a horizontal compression, non self loading *prototype* was pictured in an advertisement for sale. Those pictures embodied none of the features later found to be essential to building of stacks acceptable to the haying industry.

The advertisement's promise of an untested, one man operation led one customer to inquire and make an offer to buy. Lundahl was only able to deliver a crude, essentially handmade contraption embodying, as in the pictured prototype, little of consequence other than an enlarged, horizontal hay-baling ram for compression purposes (referred to in this case as the "DePuy Wagon"). It was only a reproduction of one of his prior prototypes, limited essentially to testing ram compression of larger volumes of hay than is fed to conventional balers. Of vastly lesser importance in the wagon was an effort to "top out" the stack with swingable gates and tuckers. Hesston even abandoned its efforts to use gates as a means of compressing.

Lundahl's good faith intent was established during the trial, as a witness for respondent Deere, by virtue of his testimony that the purchaser had been apprised of the fact that Lundahl considered his staking procedures to be merely in the stage of experimentation and learning; and he kept abreast of the attempted use made of the DePuy Wagon, in order, as he admitted, to learn more about how to stack hay.

The use made of the DePuy Wagon was, at best frustrating and fraught with difficulties. As distinguished

from all of the inventions of the patents in suit, the wagon had to be filled with hay, as it remained stationary in the field, by use of another machine as illustrated in the advertisement. The hay in the stacks was not uniform in either distribution or density and, as the result of horizontal compression, the stacks were wholly unsatisfactory because of a series of vertical, rain-receiving cleavages. Breakdowns of the wagon required frequent repair and replacement of parts, and it was inherently incapable, during advancement, of picking up, elevating, feeding, or distributing the hay evenly prior to ram compaction.

The experimental DePuy Wagon was totally unsucessful and soon abandoned, following which the disappointed purchaser reverted to prior haying procedures, instituted a civil action and recovered the purchase price without ever having the dire need satisfied as anticipated when considering, with enthusiasm, the overstatements of the Lundahl advertisement.

The DePuy machine was a single instance. Lundahl never did tool up for commercial production. Never again was anything ever produced even remotely comparable to the DePuy machine for test, for public distribution, or otherwise. The failure stopped his further progress and after sell-out to Hesston, he abandoned all efforts to complete the DePuy Wagon, perfect a machine of the type which comprised the DePuy experiment or carry out the unfulfilled promise of the advertisement.

The Patent Claims in Issue Reject the Prior Failures and Cover Only the Successful Solutions

Immediately upon its acquisition of Lundahl's ideas on stacking, Hesston instituted an about-face approach. *On Lundahl's recommendation*, the baler-ram theory for making large stacks was wholly discarded and never again

tried. Hesston continued the Lundahl experimentation program and then, dissatisfied, proceeded on its own. Late in the summer of 1968 Hesston was responsible for the first reduction to practice.

At no time thereafter did Hesston seek patent protection evenly remotely suggestive of producing a haystack in a manner comparable to the notoriously old implements for making small, wire or string tied bales which, except for tying, constituted the heart of the DePuy Wagon. And it follows that not a single patent claim in issue is so directed, not even those contained within the two Lundahl patents in suit (Appendix, pp. A49-51, *infra*). The ram of the DePuy machine is not shown, described, claimed or contemplated by any patent in suit. Instead, all of the claims involved in this case cover combinations of elements or steps which, unlike the DePuy Wagon, have, in fact, solved the long-felt need and produced highly advantageous, commercially accepted and successful results, precisely as respondent Deere also experienced at a much later date in the accused machines charged as substantial copies of those of Hesston.

The Opinion of the District Court

Invalidation of Hesston's patents by the District Court resulted from three, unorthodox and legally incorrect, primary approaches to the question of patentability of the inventions.

First, it was the District Court's opinion, without record proofs, that Hesston's inventions failed to meet the test of synergism as a condition for patentability (Appendix, p. A33, *infra*).

Second, the District Court ignored Tenth Circuit precedent and the rules of this Court, relying instead on a

decision of the Court of Appeals for the Ninth Circuit, *Robbins Co. v. Lawrence Manufacturing Company*, 482 F.2d 426, 433 (9th Cir. 1973), to support the opinion that "the advertisement and sale of the DePuy machine did not contain 'an express or clearly implied condition that the sale or offering is made primarily for experimental use'" (Appendix, p. A25, *infra*).

Rejecting, therefore, Hesston's contention that the DePuy Wagon demonstrated an experimental use exception to 35 U.S.C. § 102(b) (Appendix, p. A25, *infra*), the District Court relied heavily on the incomplete, abandoned machine and its use as a salient and highly significant prior art disclosure fully applicable as a primary reference against all of the four basic patents in suit (Appendix, pp. A17, 24, *infra*). In absence of the heavy reliance by the District Court upon the insignificant, unsatisfactory teachings of the DePuy Wagon (even if it were properly available as prior art) it would have been impossible to arrive at a persuasive holding of invalidity based solely on the disclosures in the secondary prior art patents of record.

Third, the District Court understood that the purpose of patent claims is to disclose the *functions* of the machine and method as distinguished from the mechanical means and steps for bringing about the end result of producing haystacks. On that basis the Court found it to be but necessary, in order to invalidate the claims, to try to find prior art references disclosing each *function* respectively, disregarding the question of whether or not the prior art taught the combinations of elements of the machine claims and the steps of the method claims (Appendix, p. A19, *infra*).

The Opinion of the Court of Appeals

On the question of synergism, the Court of Appeals interpreted the opinion of this Court in *Sakraida v. Ag*

Pro, Inc., 425 U.S. 273, 96 S.Ct. 1532, 47 L.Ed.2d 784 (1976) to be that the combination claims of Hesston's patents cannot be upheld in absence of a synergistic effect (Appendix, p. A38, *infra*). On that interpretation, it was found that "the trial court was not incorrect, as we view it, in holding that the Hesston patents did not achieve a synergistic result that would be nonobvious to one reasonably skilled in the art" (Appendix, p. A38, *infra*). No explanation is given as to wherein Congress intended § 103 to be so interpreted.

On the question of unsuccessful, abandoned experimental use of the DePuy Wagon, the Court of Appeals made no evaluation, simply ruling that prior use or sale under 35 U.S.C. § 102(b) is supported by the evidence (Appendix, p. A39, *infra*).

On the question of whether or not the claims in issue define the inventions in terms of function, the Court of Appeals made no analysis of any claim; instead it is merely said in the opinion that, "Hesston's patents * * * combined old elements which continue to *function* as they did previously" and "do not in combination perform a new and different *function* even though the wagons did succeed in producing a striking result by combining the old elements" (emphasis supplied) (Appendix, pp. A38, 39, *infra*).

In essence, the opinion of the Court of Appeals is a condensed paraphrase of the opinion of the District Court. Neither Court reached the issue of infringement or its effect, as a secondary consideration, upon the question of validity notwithstanding the fact that the Court of Appeals observed that all of Deere's machines "appeared to be based upon the same design as the Hesston machine" (Appendix, p. A31, *infra*).

REASONS FOR GRANTING THE WRIT

As to Synergism

As a matter of decisional law, the concept of synergism as a test for measuring validity of so-called "combination" patents has resulted in a multiplicity of conflicting views not only in definition but as to application and materiality. The conflict *must* be resolved because, as most recently observed by the Court of Appeals for the Seventh Circuit:

* * * synergism has prevented the development of a consistent, predictable body of law under section 103 * * *. *Republic Industries, Inc. v. Schlage Lock Company*, 592 F.2d 963, 972 (7th Cir. 1979).

In the *Republic* decision, synergism is specifically and bluntly rejected and discarded as a condition for patentability with a ruling that *Graham v. Deere* sets the exclusive tests for measuring nonobviousness under § 103 (592 F.2d 963, 972).

Moreover, the United States Patent Office continues to issue patents, with no requirement whatsoever for a synergistic effect, by virtue of a directive to the Patent Office Examiners from the Commissioner of Patents and Trademarks in Chapter 706 of the Manual of Patent Examining Procedure (Appendix, pp. A58, 61, *infra*).

Directly contrary to the Patent Office and the Seventh Circuit viewpoint are numerous decisions among the various Courts of Appeal. For example, in the Ninth Circuit, it was recently held that, inasmuch as the "Plaintiffs failed to identify a synergistic result * * * the patent is not valid, having no new, unusual or synergistic result * * *." *Herschensohn, et al. v. Hoffman, et al.*, No. 77-1718 and No. 77-2638 (9th Cir. 1979) (Appendix, pp. A63, 68, 70, *infra*).

Similarly in the Eighth Circuit, it was held that " * * * one of the factors this court must look for in determining whether the patent meets section 103 requirements is synergism." Finding no synergism, the patents in suit were found to be invalid. *Reinke Manufacturing Company, Inc. v. Sidney Manufacturing Corporation*, No. 78-1341 and No. 78-1301 (8th Cir. 1979) (Appendix, pp. A75, 82, 89, *infra*).

Neither in *Herschensohn* nor in *Reinke* did the Courts mention or discuss *Republic* which emphatically repudiates the synergism doctrine.

Significantly, differing panels within the Eighth Circuit do not even appear to be in complete agreement. While in *Reinke* it was held that the court *must* look for synergism, one year earlier the Court found that " * * * we need not address the question of whether or not a synergism analysis was mandatory on the facts here", irrespective of the fact that the District Court made "no explicit analysis of synergism." *Clark Equipment Company, et al. v. Keller*, 570 F.2d 778, 788, 789 (8th Cir. 1978).

But, Judge Gibson went on to observe in *Clark* that "in patent law context, 'synergism' has no talismanic power; synergism is merely one indication of nonobviousness * * * form would triumph over substance were we to hold this analysis inadequate for lack of specific reference to synergism * * * " (570 F.2d 778, 789).

While *Clark* (the Eighth Circuit case) is cited by the Seventh Circuit in *Reinke*, no mention is made in the later decision of the discussions on synergism in the earlier Eighth Circuit case.

As stated by this Court in *United States v. Adams*, 383 U.S. 39, 50, 86 S.Ct. 708, 713, 15 L.Ed.2d 572 (1966):

If . . . a combination is novel, the issue is whether bringing them together as taught by [the inventor] was obvious in the light of the prior art.

The *Republic* court, after referencing the above quotation from *Adams* observed that:

Synergism, however, precludes this analysis. Because synergism centers exclusively on the performance of the elements *after* combination and without regard to the obviousness or nonobviousness of *making the combination*, synergism does not comport with the Graham mandate to apply section 103. (Page 971, emphasis by the court).

Presented, therefore, is the question of whether or not patents shall continue to be issued with no requirement for synergism whereupon, depending upon the forum chosen for litigation, patentees will be forced to thereafter attempt to prove synergistic effect in accordance with the special definition that may have been or will be selected for the doctrine in that particular circuit.

Equally important is whether or not, in the scathing opinion of *Republic*, treating synergism, in effect, as utter nonsense, it is correct to conclude that this Court never intended to condition patentability upon the existence of synergism either in *Anderson's-Black Rock, Inc. v. Pavement Salvage Co., Inc.*, 396 U.S. 57, 90 S.Ct. 305, 24 L.Ed. 2d 258 (1969) or in *Sakraida v. Ag Pro, Inc.*, 425 U.S. 273, 96 S.Ct. 1532, 47 L.Ed.2d 784 (1976) (529 F.2d 963, 968-969).

Inasmuch as "synergistic", borrowed from the language of chemistry to denote the effect of combining ingredients, is a word newly voguish in reference to mechanical claims, should it, as suggested in *Republic*, not

now go into the limbo reserved for other vogue words of yesteryear?

As to Experimental Use and Sale

In more than 100 years this Court has not modified its viewpoint that the public derives benefits from adequate periods of time to conduct experiments for perfection of inventions. *City of Elizabeth v. American Nicholson Pavement Co.*, 97 U.S. 126, 24 L.Ed. 1000 (1878). A bona fide intent of testing the qualities of a machine, carried out in good faith under the surveillance of the inventor prior to commencement of sales for general use, does not bring an invention into public use under the statute, whether or not reduction to practice occurs prior to sale, whether or not changes are thereafter required, and regardless of the extent of public knowledge or use of the invention under test (97 U.S. 126, 133-135, 24 L.Ed. 100, 1004-1005).

Moreover, the defendant has the burden of showing that the invention in alleged public use was (a) complete, (b) capable of working and producing the result sought to be accomplished, (c) of practical efficacy and utility and (d) successful (*Coffin v. Ogden*, 85 U.S. (18 Wall. 120-125 (1874), aside from the question of continuous and extensive production. *Electric Storage Battery v. Shimadzu*, 307 U.S. 5, 18-20, 83 L.Ed. 1071, 1080, 1081 (1939). In any event, determination *must* be made as to which, if any, of the patent claims in issue cover the alleged public use. *Smith & Griggs Mfg. Co. v. Sprague*, 123 U.S. 249, 265-267, 8 S.Ct. 122, 31 L.Ed. 141, 147 (1887).

The New Approach

However, in 1973 the Ninth Circuit proceeded on a new theory and adopted a new rule. *Robbins Company*

v. *Lawrence Manufacturing Company*, 482 F.2d 426, 433 (9th Cir. 1973). It was held therein that no inquiry can even be made into the matter of experimentation *unless* there is an express or clearly implied condition actually contained within the contract of sale or the offer for sale that it is made primarily for experimentation.

Contrary to the rules of this Court, in the Ninth Circuit, no inquiry can be made into good faith and bona fide intent. Only limited inquiry into the circumstances surrounding an advertisement for sale or delivery can be made *unless* the preexisting condition is first shown to exist *therein*. Inquiry is permissible only (1) if the experimental nature is *stated* in the contract or offer for sale; or (2) the device is shown to be experimental *and* no workable prototype exists; or (3) there is a confidential relationship; or (4) reports are supplied the inventor or (5) similar statements appeared from which experimental purpose can be implied (482 F.2d 426, 433).

Such is the new theory and rule also adopted herein by the District Court (Appendix, p. A25, *infra*) and supported by the Court of Appeals (Appendix, p. A39, *infra*).

Rejection of New Theory and Rule

A direct and highly significant conflict has resulted in the Fifth Circuit's *express* refusal to adopt the Ninth Circuit rule and now, as the result of the Tenth Circuit's selection of a rule which the Fifth Circuit considers merely "a trap for the unwary"; which "could work injustice" and which is "excessively rigid." *In Re Yarn Processing Patent Validity Litigation*, 498 F.2d 271, 287 (5th Cir. 1974).

In *Yarn*, it is expressly stated that the rule *today* is still that of this Court laid down by *Elizabeth* (498 F.2d 271, 277) (emphasis added). The case stands for the prop-

osition that a bona fide experimental intent is the primary, determining factor, "even if that intent is not indicated within a contract of sale or offering", contrary to the new Ninth Circuit rule (498 F.2d 271, 287). After discussion of several divergent points of view in prior decisions, the court indicated its "full agreement" with this Court, concluding:

Faced with this possible conflict, we of course follow the Supreme Court's view. (498 F.2d 271, 285).

Considerable emphasis is placed in *Yarn* upon the fact that under the *Elizabeth* rule completion of the invention (reduction to practice), resulting in no need for change after the test, does not necessarily, of itself, constitute a bar, as long as experimentation was the primary motive in order to bring the invention to perfection.

But more importantly, insofar as the instant case is concerned, *Yarn* makes it abundantly clear that there can be *no* public use or sale bar "before a finished working prototype embodying the *claims* of the later patent exists in objective form" (emphasis added). This legal reality is so directly applicable to the instant facts hereinabove outlined as to warrant further quotation from *Yarn*:

Of course there can be no public use or sale of the invention during phase two*, but, strictly speaking, *this is not by operation of the experimental use exception* (emphasis supplied).

Rather, there can be no public use or sale because there cannot be *any* use or sale of the invention at all, since

*Briefly, the court considered four phases of development of an invention: (1) the initial conception, (2) attempts to build a prototype, ending with completion of "a working model that substantially embodies the claims later to be patented", (3) experimentation with that model to prove fitness for its intended purpose and (4) seeking and obtaining patent protection (498 F.2d 271, 275).

it is not in existence but is merely in an incomplete stage of development. (Emphasis in original). The possibility of public use or sale does not even arise until the end of phase two; before that, the invention is not yet "functional for public use purposes." (498 F.2d 271, 284).

The Seventh Circuit, citing *Elizabeth*, agrees with the Fifth Circuit, that the rule today is a matter of "the inventor's intent" (*Red Cross Mfg. Corp. v. Toro Sales*, 525 F.2d 1135, 1144 (9th Cir. 1975)), contrary to the viewpoint in the Ninth Circuit. Significantly also, in conflict with the results of the instant case, *Red Cross* emphasizes, as in *Yarn*, that determination *must* be made of whether or not the use and sale was made of the *inventions as claimed* in the patents (525 F.2d 1135, 1141-1143). That is, all important is the question of whether or not it (the claimed invention) was complete and working, as fully and carefully analyzed in *Yarn* (498 F.2d 271, 280-283) and in *Dart Industries, Inc. v. E.I. Dupont De Nemours and Co.*, 489 F.2d 1359, 1365 (7th Cir. 1973).

Also contrary to the results of the instant case by virtue of adoption of the rule of *Robbins*, is the fact that subsequent thereto, even the Ninth Circuit recognized that, despite the *Robbins* rule, an incomplete invention cannot be "on sale". *Austin v. Marco Dental Products, Inc.*, 560 F.2d 966, 969 (9th Cir. 1977).

The Ninth Circuit now acknowledges its rule does not "harmonize" with an interpretation of the Fifth Circuit rule that "the inventors subjective intent is a crucial issue in respect to public use, *vel non.*" *American Machine & Hydraulics Inc.*, 585 F.2d 404, 405 (9th Cir. 1978).

Unexplained is why the Court of Appeals herein condoned the switch-over by the District Court to the Ninth

Circuit rule contrary to the prior, long-standing rule of the Tenth Circuit, which consistently followed this Court's view. See *Merrill v. Builders Ornamental Iron Co.*, 197 F.2d 16, 19 (10th Cir. 1952) saying that good faith is "the determining factor", followed for example, by *McCullough Tool Co. v. Well Surveys, Inc.*, 343 F.2d 381, 393 (10th Cir. 1965) and by *Universal Marion Corp. v. Warner & Swasey Co.*, 354 F.2d 541, 545 (10th Cir. 1965).

As to Examination of Separate Claims

Manifestly, application of appropriate standards by the courts requires that they ascertain the "differences between the prior art and the claims at issue". *Graham v. Deere*, 383 U.S. 1, 17, 36 S.Ct. 684, 15 L.Ed.2d 545, 556 (1966). Left open is the question of precisely what is required to demonstrate that such differences have, in fact, been determined. Is it sufficient for the courts, with no findings of fact or other analyses, to merely state in their opinions that comparison has been made? Or must the claims themselves be examined as carefully as the prior art, followed by appropriate findings, or by at least some indication, which spells out the court's understanding of the differences and similarities?

The answers to these questions become self-evident from the following observation by this Court in *Altoona Publix Theatres, Inc. v. American Tri-Ergon Corporation*, 294 U.S. 477, 487, 55 S.Ct. 455, 79 L.Ed. 1005, 1012 (1935):

The Court of Appeals, in upholding the patent, made no examination of its separate claims, but treated the patent throughout as though it were a combination of five distinct elements, the photoelectric cell, the arcuate flexing of the film, the flywheel, and the flexible connection of the flywheel and the optical slit, although nowhere in the patent is any such combina-

tion claimed. The patent thus upheld is one which was neither claimed nor granted.

That error therein discovered by this Court on review (failure to examine the separate claims) is no less evident in the opinion of the District Court in this case and magnified by total absence of treatment in the decision of the Court of Appeals. Appropriate directions to the courts in line with *Altoona* as to what is required to comply with the three point test of *Graham*, is direly needed.

As stated in *Altoona*, "under the statute it is the claims of the patent which define the invention * * * and each claim must stand or fall, as itself sufficiently defining the invention, independently of the others." (294 U.S. 477, 487, 79 L.Ed. 1005, 1012). Application of these age old doctrines to the opinion of *Graham* by specific mandate at this time will avoid sweeping validation or invalidation of patents without a clear indication of which claims were actually examined and understood by the courts, and how each was treated in relation to the prior art.

As stated by Judge Hand in *Reiner v. I. Leon Co.*, 285 F.2d 501, 503 (2nd Cir. 1960), virtually all inventions consist of combinations of old elements, the sole issue being patentability of the new assemblage. The drift of the 1952 Patent Act, according to Judge Hand, was to remove the hostility toward patents and to provide a statutory command in lieu of judicial gloss. Ignoring the claims and merely reciting, one by one, old elements found in the prior art runs counter to these concepts.

It also runs counter to § 103 which requires inquiry into the "subject matter as a whole" rather than individual elements. Too few courts emphasize this requirement as carefully as in *Reeves Instrument Corp. v. Beckman Instruments, Inc.*, 444 F.2d 263, 270, 271 (9th Cir. 1971),

recognizing also that nothing would be patentable if novelty of the combination of the claims in their entireties is to be disregarded. Virtually all patent claims are made up of a combination of elements each of which can easily be found to be individually old and each of which can be analyzed for "function" in the prior art such as to result in invalidity contentions notwithstanding the novelty, the new and unexpected results and the nonobviousness of the combination.

That is to say, should the courts be permitted to continue in their confusion with the belief that, all combination claims are likely to cover a mere catalog of old, separate, uncooperative elements as in the famous pencil-eraser "aggregation" case? *Reckendorfer v. Faber*, 92 U.S. 347, 23 L.Ed. 719 (1876). Or, should it now be clarified, once again, that the test is not whether or not the aggregation argument is perhaps available with respect to all inventions? *B.G. Corporation v. Walter Kidde & Co.*, 79 F.2d 20, 22 (2nd Cir. 1935).

The questions are of special significance here, considering the fact that the DePuy Wagon, for example, taught away from the claimed inventions. Examination of the claims shows that the wagon, even if properly considered as prior art, taught how to *not* make a large haystack and was a mere invitation to experimentation. No rule of law could possibly be established which would permit that type of prior event to be used positively as a relevant teaching combined with other references to support obviousness, coupled with treatment of the patented inventions as if they relate to mere aggregation of elements precisely as in the invention of a pencil with an eraser.

In summary, we submit that this Court must now make it abundantly clear that the purpose of § 103 is to eliminate

determination of patentability by picking one element from one patent or publication and picking another element out of another patent or publication and so on, thereby using individual elements of the prior art to build up a theoretical, composite machine or method with no consideration given to the combinations of the claims at issue.

CONCLUSION

When due consideration is given to the improper statutory and legal standards applied in the opinions below, doubts as to the correctness of the decisions become manifest. The issues of patentability herein presented for review must be regarded as of exceptional importance, particularly in view of the unusual value of the patented inventions to the public from the standpoint of economy in food production. If this petition is granted and the decision of the Court of Appeals is reversed, the impact and practical results of the holding will be the resolution of several conflicts of opinion in extremely troublesome areas such as to cause serious adverse effects upon uniform determination of the validity of patent claims among the courts.

Respectfully submitted,

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APPENDIX

IN THE UNITED STATES DISTRICT COURT
 FOR THE DISTRICT OF UTAH
 CENTRAL DIVISION

C 299-73

DEERE & COMPANY,
 Plaintiff,

v.

HESSTON CORPORATION,
 Defendant.

JUDGMENT

(Filed May 4, 1977)

The court in the above-entitled matter, having heretofore entered its findings of fact and conclusions of law, herewith enters its order and judgment based thereon.

IT IS HEREBY ORDERED, ADJUDGED, AND DECREED as follows:

1. The court enters its order and judgment denying the plaintiff's request for declaratory judgment that the four major patents in issue were obtained by the defendant's purported fraud on the Patent Office; and

2. The court enters its order and judgment granting the plaintiff's request for a declaratory judgment that the patents in issue are invalid for failure to satisfy the statutory requirements for patentability of 35 U.S.C. §§ 102(b), 103 (1970).

Dated May 3, 1977.

/s/ Aldon J. Anderson
 Aldon J. Anderson
 United States District Judge

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF UTAH
CENTRAL DIVISION

C 299-73

DEERE & COMPANY,
Plaintiff,

v.

HESSTON CORPORATION,
Defendant.

**MEMORANDUM OPINION IN LIEU OF FINDINGS
OF FACT AND CONCLUSIONS OF LAW
UNDER RULE 52**

(Filed May 4, 1977)

For Plaintiff: Dennis McCarthy, Rand L. Cook, 141 East First South, Salt Lake City, Utah 84111; Dugald S. McDougall, Theodore R. Scott, 135 South LaSalle Street, Chicago, Illinois 60603.

For Defendant: William T. Thurman, McKay, Burton, McMurray & Thurman, 500 Kennecott Building, Salt Lake City, Utah 84133; Gordon D. Schmidt, Warren N. Williams, Schmidt, Johnson, Hovey & Williams, 1800 Federal Reserve Bank Building, 925 Grand Avenue, Kansas City, Missouri 64106.

The plaintiff, Deere & Company ("Deere"), filed this action under 28 U.S.C. § 2201 (1970) for a declaratory judgment that the defendant's eight patents in issue¹ were invalid and that the plaintiff was not, therefore, liable for

1. While the original complaint sought a declaratory judgment on only two of the major patents, Hesston counterclaimed on eight additional patents of which two design patents were withdrawn before trial; eight patents presently remain in issue.

infringing these patents. The defendant, Hesston Corporation ("Hesston"), counterclaimed for damages and alleged that Deere had infringed Hesston's validly issued and enforceable patents. The court held trial beginning May 10, 1976, and the parties finally submitted the matter to the court following a post-trial hearing on January 28, 1977.

I. Patents in Issue and Background

The eight patents and the relevant claims in issue are as follows:

- (1) Garrison Patent No. 3,556,327 (hereinafter referred to as "Garrison I patent") directed to a *haystacking machine*, which is essentially protected in claims 1, 2, 6, and 7 of that patent;
- (2) Garrison Patent No. 3,847,072 (hereinafter referred to as "Garrison II patent") directed to a *haystacking method*, which is essentially protected in claims 1, 3, 4, and 7 of that patent;
- (3) Lundahl Patent No. 3,728,849 (hereinafter referred to as "Lundahl I patent") directed to a *method for making haystacks*, which is essentially protected in claims 1, 2, 7, and 9 of that patent;
- (4) Lundahl Patent No. 3,828,535 (hereinafter referred to as "Lundahl II patent") directed to a *haystacking machine*, which is essentially protected in claims 1, 10, 11, 12, and 13 of that patent;
- (5) Adee Patent No. 3,878,670 (hereinafter referred to as "the '670 patent") directed to a *press-controlled deflector*, which is an improvement on the *haystacking machine* and is essentially protected in claims 9, 10, 11, and 12 of that patent;

(6) White Patent No. 3,899,966 (hereinafter referred to as "the '966 patent") directed to improving the hay-stacking machine by using the press-actuating power cylinders to open and close the tailgate, which improvement is essentially protected in claims 5, 6, and 7 of that patent;

(7) Brooks-McDaniel Patent No. 3,757,687 (hereinafter referred to as "the '687 patent") directed to an improvement of the press-actuating mechanism, which is essentially protected in claims 4, 5, 6, 7, 8, and 10 of that patent; and

(8) Anderson Patent No. 3,842,732 (hereinafter referred to as "the '732 patent") directed to a further improvement of the tailgate actuating mechanism, which is essentially protected in claims 1, 2, 5, 7, and 10 of that patent.

The parties' dispute mainly centers on the Lundahl I, II and Garrison I, II patents: For this reason, the court hereafter will frequently refer to these patents collectively as "the four major patents in issue."

The relevant background to these patents reveals that in the early 1960's, Cordell Lundahl (doing business with his father Ezra C. Lundahl as Ezra C. Lundahl, Inc.) began to build and test a machine designed to compress loose hay into a large, dense, weather-resistant haystack. Cordell Lundahl's first stacking wagon had high side walls and a false front which was used to compress the hay at appropriate intervals as the hay collected against the closed rear doors of the wagon. In addition to the horizontal compaction against the rear doors, the hay was compacted vertically by means of two swingable, gate-like presses to form the top of the stack. To enhance the structural integrity of the haystack as it was being formed in the wagon, Cordell Lundahl added supplemental com-

pressors to the underside of the gate-like presses to increase the vertical compression of the hay. This Lundahl hay-stacking wagon, unlike later prototypes, did not have an integrated means for picking up the hay from the field windrow, elevating the hay, or spreading the hay evenly in the wagon. Rather, the hay was deposited in the wagon by means of a tractor-operated pitchfork called a "Farm-hand."

Ezra C. Lundahl, Inc., in the February 3, 1966, issue of the *Montana Farmer-Stockman*, advertised a "one man automatic feeding system for long hay" that would "also stack and compress loose hay from the windrow." As a result of this advertisement, Ezra C. Lundahl, Inc., sold a haystacking wagon to DePuy Enterprises, Inc., on July 1, 1966 (hereinafter referred to as "the DePuy machine"). The DePuy machine was used during the 1966 haying season and for at least part of the 1967 haying season. In 1968, DePuy Enterprises, Inc., filed suit for damages for breach of warranty against Ezra C. Lundahl, Inc., due to certain mechanical failures in the DePuy machine that had developed during use. Ezra C. Lundahl, Inc., settled the lawsuit by paying the plaintiffs \$2,999. The DePuy machine was thereafter abandoned for haystacking purposes.

Hesston acquired the assets of Ezra C. Lundahl, Inc., on August 1, 1966, and continued the development of the haystacking machine. Hesston transferred an engineer, Keith Garrison, to Logan, Utah to complete and to reduce to practice a haystacking wagon based on Cordell Lundahl's original concepts. Lundahl and Garrison completed the development of a prototype haystacking machine in December, 1966. The prototype was then field tested in Arizona and Florida during early 1967. This prototype embodied pressing components, a hay pickup device, an elevator,

a structure to spread the hay evenly in the wagon, a tailgate that opened to unload the formed stack, and a device to push the formed stack out of the wagon onto the ground.

On June 1, 1967, Garrison returned to Hesston's Kansas headquarters to design a haystacking wagon for commercial manufacture that was to be "functionally equivalent although structurally different" from the Lundahl haystacking wagon. (Hesston's Main Brief at 89). As Hesston admits, "manufacture of the Garrison machine infringes the claims of the Lundahl patents" (Hesston's Main Brief at 89), but Hesston has paid Lundahl for such infringement. Garrison's haystacking machine improved certain features of the earlier Lundahl wagon and was reduced to practice in the fall of 1968.

Hesston authorized its attorney to begin preparing patent applications on both the Lundahl and Garrison machines on September 5, 1968. Hesston filed the initial Garrison patent application with the Patent Office on April 14, 1969. Hesston filed the initial Lundahl patent application with the Patent Office on November 14, 1969, although Lundahl's haystacking wagon concept and development antedated that of Garrison.

In applying for the Garrison I patent, Hesston did not refer to the prototype Lundahl haystacking wagons on which Garrison had worked to improve and to reduce to practice a haystacking machine originally conceived by Lundahl. The Garrison I patent application matured on January 19, 1971, and is now in issue in this lawsuit. By filing a "divisional application" on October 23, 1970, Hesston sought to secure a patent on method claims for making haystacks. The patent examiner initially rejected all the method claims as unpatentable over prior art. De-

spite Hesston's rewritten and resubmitted method claims, the patent examiner again rejected the divisional application and cited as grounds for such rejection the Sutherland British patent:

"Sutherland shows a harvester which advances across a field, picks up crop, conveys it to a chamber and lowers a press on the crop. Applicant's recited method differs from Sutherland in the exact type of conveying, i.e., the use of a blower conveyor. This feature is, however, shown to be old by Bayerische Pf. in the same environment and a mere substitution of equivalents exists."

Hesston thereafter abandoned the divisional application.

Hesston filed a continuation application on April 16, 1973. The Patent Office allowed the claims in the continuation application and the Garrison II patent now in issue matured on November 12, 1974.

On March 9, 1972, the patent examiner rejected the Lundahl patent application, filed November 14, 1969, on the ground that the claims therein were "clearly anticipated by Garrison." On October 4, 1972, Ezra C. Lundahl filed an affidavit under Rule 131, 37 C.F.R. §1.131 (1976), "swearing back" of the Garrison application. This procedure overcame the prior art reference to the Garrison I patent. However, in pursuing the Lundahl I patent application, Hesston did not disclose to the patent examiner the existence or the sale of the DePuy machine. The Lundahl patent application matured into a patent on April 24, 1973.

On February 7, 1973, Hesston filed a "divisional application" to secure the machine claims on the Lundahl haystacking wagon. The patent examiner initially rejected this divisional application in light of the prior Garrison

I patent. By reference to the 131 Affidavit of Ezra C. Lundahl, Hesston overcame the Garrison I patent as a prior art reference. On February 19, 1974, the patent examiner allowed some claims, but rejected other claims as unpatentable over the Sutherland British patent in view of the Bayerische reference. Hesston filed an amendment dated April 1, 1974, in which it stated that:

"The Claims in this case were prepared and submitted on the basis of a rather full and comprehensive knowledge of voluminous prior art, including the three (3) references herein referred to by the Examiner. The key to Claims 15-30 lies in Lines 11-13 of Claim 24 and is directed to a concept that is simply not contemplated by any prior disclosure known to applicant.

Never before has any one clearly come up with the idea of using a press other than to carry out its normal function of material compressing. More particularly, it is absolutely new to provide a hay gathering or collection feature in a press as its initial function in cooperation with the main crop receiving body."

The patent examiner subsequently allowed the claims and the Lundahl II patent was issued on August 13, 1974.

The factual summary to this point is relevant to the issue of patent validity and enforceability. The court need not narrate the facts relevant to Hesston's infringement counterclaims at this point. Deere raises two issues, based on these facts, that are relevant to patent validity and enforceability which the court must analyze before proceeding to the infringement issue.

First, Deere contends that the four major patents in issue are unenforceable since they were allegedly obtained

through Hesston's fraud on the Patent Office. Secondly, Deere contends that notwithstanding the fraud issue, the patents in issue are invalid because they fail to satisfy the standards of patentability set forth in 35 U.S.C. §§ 102(b), 103 (1970).

II. Fraud on the Patent Office

Deere contends that Hesston perpetrated a fraud on the Patent Office by failing to disclose: (1) during the course of the applications for the Garrison I and II patents, the prior art taught to Garrison by the earlier Lundahl prototype haystacking wagon tested in Arizona and Florida, on which Garrison merely contributed mechanical improvements to Lundahl's original concept; and (2) during the course of the applications for the Lundahl I and II patents, the development and sale of the DePuy machine, which Deere contends is prior art on the Lundahl I and II patents.

In *Kingsland v. Dorsey*, 338 U.S. 318 (1949), the United States Supreme Court, adopting the language of the Patent Commissioner, set forth the standard of conduct required of counsel practising before the Patent Office:

"By reason of the nature of an application for patent, the relationship of attorneys to the Patent Office requires the highest degree of candor and good faith. In its relation to applicants, the Office . . . must rely upon their integrity and deal with them in a spirit of trust and confidence"

Id. at 319 (emphasis added). Accord *Precision Instrument Manufacturing Co. v. Automotive Maintenance Machinery Co.*, 324 U.S. 806, 818 (1945). The policy supporting this standard of conduct is "[t]he far-reaching social and economic consequences of a patent . . . [that] give the public

a paramount interest in seeing that patent monopolies spring from backgrounds free from fraud or other inequitable conduct and that such monopolies are kept within their legitimate scope." *Id.* at 816.

To establish that the patent is invalid or unenforceable, Deere must establish by clear and convincing evidence that Hesston procured the four major patents in issue by fraud. *McCullough Tool Co. v. Well Surveys, Inc.*, 343 F.2d 381, 394 (10th Cir. 1965). To constitute fraud on the Patent Office, Deere must prove that Hesston's nondisclosure was material, i.e., that the Patent Office would have rejected Hesston's four major patent applications *but for* Hesston's fraudulent conduct in not disclosing the earlier Lundahl haystacking wagons. *See Norton v. Curtiss*, 433 F.2d 779, 795 (C.C.P.A. 1970). On the present state of the record and based on the court's subsequent analysis herein of the prior art, including the earlier Lundahl haystacking wagons, Deere has not proven by clear and convincing evidence that the Patent Office would have rejected the four major patents in issue *but for* the allegedly fraudulent nondisclosure.

Deere must also prove by clear and convincing evidence that Hesston's conduct before the Patent Office in not disclosing the prior Lundahl haystacking wagons during the applications for the four major patents in issue constituted willful, intentional, or wrongful conduct, *Tokyo Shibaura Electric Co. v. Zenith Radio Corp.*, 404 F. Supp. 547, 569 (D. Del. 1975); *In Re Frost Patent*, 398 F. Supp. 1353, 1366 (D. Del. 1975), or that Hesston's conduct was "so extreme as to be described as recklessness or gross negligence." *Turzillo v. P&Z Mergentime*, 532 F.2d 1393, 1400 (D.C. Cir. 1976). In *Walker Process Equipment, Inc. v. Food Machinery & Chemical Corp.*, 382 U.S. 172 (1965), the Court distinguished patents procured by "in-

tentional fraud," which would strip the patentee of its antitrust exemption, from "technical fraud," which would not render the patent invalid so long as the patentee made "an honest mistake as to the effect of prior [art] upon patentability." *Id.* at 177. *See Xerox Corp. v. Dennison Manufacturing Co.*, 322 F. Supp. 963, 968-69 (S.D.N.Y. 1971) (allowed patent applicant "the right to exercise good faith judgment in deciding what matters are and are not of sufficient relevance and materiality to require disclosure.").

Based on the present state of the record, the court concludes that the evidence is insufficient to impute to Hesston and its attorneys a fraudulent intent or gross and reckless conduct that would justify a finding of patent invalidity due to a purported fraud on the Patent Office. Hesston and its attorneys exercised good faith judgment on whether to include the prior Lundahl wagons as prior art in the Lundahl I, II and Garrison I, II patent applications. That good faith judgment, based on a strict notion of the scope of the intended patent in reference to the prior art, though erroneous, will not render the patent invalid. The court, therefore, denies Deere a declaratory judgment that the four major patents in issue are invalid due to Hesston's alleged fraud on the Patent Office.

III. Patentability

Deere seeks a declaratory judgment that the patents in issue are invalid as being unpatentable over the prior art. The determination of patentability must begin with the source of congressional authority to define and to limit patents. The Constitution grants Congress the power "[t]o promote the Progress of Science and the useful Arts, by securing for limited Times to . . . Inventors the exclusive right to . . . their Discoveries." *U.S. Const.*

art. I, § 8, cl. 8. The statutory and case precedent have interpreted this constitutional provision to require three elements of patentability; utility, novelty, and nonobviousness.

Prior to the passage of the Patent Act of 1952, the two basic statutory requirements for patentability were that the device must be "new and useful." Act of Feb. 21, 1793, ch. 11, 1 Stat. 318. In *Hotchkiss v. Greenwood*, 52 U.S. (11 How.) 248 (1851), the Supreme Court defined "new" to include what in effect became a third test of patentability; to be patentable a device must demonstrate "skill and ingenuity" beyond that possessed by "the skillful mechanic." *Id.* at 267. *Hotchkiss*, therefore, required that the device be an "invention" to be patentable.

The courts narrowly interpreted this standard of invention. For example, in *Cuno Engineering Corp. v. Automatic Devices Corp.*, 314 U.S. 84, 91 (1941), the Court required that "the new device, however useful it may be, must reveal the flash of creative genius, not merely the skill of the calling." See also *Great Atlantic & Pacific Tea Co. v. Supermarket Equipment Corp.*, 340 U.S. 147, 154-55 (1950) (device must be a "distinctive contribution to scientific knowledge") (Douglas, J., concurring). This standard of invention prior to the Patent Act of 1952 has been severely criticized for failing to provide an objective, practical standard for determining patentability. See generally Rich, *Principles of Patentability*, 28 Geo. W.L. Rev. 393 (1960).

The Patent Act of 1952 reenacted the "new and useful" formula of patentability by refining the definitions of novelty and utility. 35 U.S.C. §§ 101, 102 (1970). Congress also sought to remedy the lack of a practical standard embodied in the invention test of *Hotchkiss* by introducing into section 103 the objective standard of nonobviousness.

As the Court explained in *Graham v. John Deere Co.*, 383 U.S. 1, 14 (1966) (emphasis added):

"The first sentence of [section 103] is strongly reminiscent of the language in *Hotchkiss*. Both formulations place emphasis on the pertinent art existing at the time the invention was made and both are implicitly tied to advances in that art. The major distinction, is that Congress has emphasized 'nonobviousness' as the operative test of the section, rather than the less definite 'invention' language of *Hotchkiss* that Congress thought had led to 'a large variety' of expressions in decisions and writings."

The Court also interpreted § 103 as abolishing the test phrased as "flash of creative genius" used in *Cuno Engineering Corp. v. Automatic Devices Corp.*, *supra*. 383 U.S. at 15 & n.7.

To summarize, the present standards of patentability, which the court implements to determine whether Hesston's eight patents in issue are in fact patentable, are utility under § 101, novelty under § 102, and nonobviousness under § 103. Deere does not challenge the Hesston patents on the ground that they are not useful. The court, therefore, presumes, and the evidence supports the conclusion, that Hesston has satisfied the requirements of patentability under § 101.

A. Nonobviousness Under Section 103

The Supreme Court in *Graham v. John Deere Co.*, *supra*, set forth the basic factual inquiries to consider in determining patent validity under § 103:

"Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and

the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may have relevancy."

383 U.S. at 18-19. The Supreme Court has continued to apply the three-pronged *Graham* test of patentability under § 103. See *Sakraida v. Ag Pro, Inc.*, 425 U.S. 273, 280 (1976); *Dann v. Johnston*, 425 U.S. 219, 230 (1976).

The Prior Art

To demonstrate that the Hesston patents are obvious and thus unpatentable, Deere cites the following prior art references:

(1) Hale Patent No. 371,314 (Oct. 1887) that describes a hay-cocking machine the main function of which was to gather "scattered hay or other fodder up from a field and [discharge] the fodder to the ground in compact piles or cocks for protection against storms." To summarize claims 1 through 4 of the Hale Patent, the hay-cocking machine gathered the hay from the ground, elevated the hay into an open bin, provided a "flexible distribution reciprocating back and forth over the open top," and a hinged bottom to drop the hay "cock" on the ground.

(2) Isom Patent No. 1,272,666 (July 1918) that describes a mechanical hay shocker. Claim 1 of the Isom patent sufficiently sets forth the mechanics of the hay shocker as they are relevant to the present facts:

"A mechanical hay shocker comprising in combination a hopper, delivering means discharging into the hopper, tamping members within the hopper, a draper forming the bottom of the hopper, and means whereby the delivery means may be stopped, the tamping member operated, the doors opened and the draper started in motion in the order named."

(3) Sutherland British Patent No. 951,698 (1964) describing a harvesting machine with the purpose "to provide an improved construction of hay harvesting machine by which the hay can be compressed to form a stack and then deposited on the ground." The Sutherland British patent was the patent examiner's prior art reference for initially rejecting the Garrison II patent application. The Sutherland British patent clearly teaches vertical compression of the hay to form a stack as set forth in Claim 1 of that patent:

"A machine for harvesting hay comprising a wheeled trailer which can be hitched to a tractor, a compression chamber mounted on the trailer and into which the hay can be charged, said chamber being open at the top and having a rear wall which can be opened, and a hydraulically operated compression member by which the hay introduced into the chamber can be compressed to form a stack which can then be ejected from the chamber when the rear wall is opened."

Of particular significance to the Hesston patents are lines 48-60 on page 1 of the Sutherland British patent which describes the compression member of the patent and its use not only to compress the hay, but to form a "ridged top to the stack."

(4) Murphy Patent No. 517,930 (April 1894) describes an improvement on a baling press to open and close automatically the baling chamber by connecting rods and linkage to the press mechanism. Deere cites Murphy as prior art to the '966 patent in the details of the tailgate latching and unlatching mechanism as it works in cooperation with the press actuating power cylinders.

(5) Hill Patent No. 1,164,519 (Dec. 1915) describes a device to compress further cotton that has already been baled by using steam power and a series of "gear-toothed racks" connected to rocking levers. Deere cites Hill as prior art to the '687 patent insofar as Hill teaches the use of intermeshing gear teeth in combination with links and levers to equalize the forces at each corner of a four-cornered press.

(6) Lohry Patent No. 2,230,756 (Feb. 1941) describes a system to actuate automatically automobile windows through a series of gears. Though factually not analogous, Deere cites Lohry as prior art to the '687 patent as teaching the use of intermeshing gear teeth in a mechanical fashion similar to that contained in the Hill patent as it refers to the '687 patent.

(7) Clark Patent No. 3,186,448 (June 1965) describes a device for compressing tobacco into a hogshead by deflecting the flow of tobacco to even distribution in the container wherein the tobacco is then compacted. Deere cites Clark as prior art to the '670 patent. Deere contends that the '670 patent uses a linkage connected to a single power cylinder which is similar in function to the Clark patent to adjust the crop deflector while raising and lowering the press.

(8) Lundahl Super-60 Forage Harvester which Deere cites as an example of an equivalent device for elevating

hay into the bin through a blower-type loader rather than through an endless belt elevator, which represents the different methods of elevating hay between the Garrison and Lundahl patents. The forage harvester is merely an example of an old machine and method for elevating crops which Garrison incorporated into his broad combination to achieve an allegedly patentable result.

(9) Hesston's South African Patent No. 71/5017 that Deere cites, among other foreign patents, as prior art to the '732 patent. Hesston, at page 67 of its Main Brief, tacitly admits that the South African patent reads on the American '732 patent, but argues that the disclosures in the South African patent were not such prior art as to preclude the issuance of the patent since the patent examiner considering the '732 patent had cited and thus knew of the South African patent when he allowed the '732 patent claims.

Deere cites the DePuy machine as prior art to the Lundahl I and II patents. While the DePuy machine does not contain certain mechanical features that were ultimately incorporated into the Lundahl wagons, such as hay pickup, elevation, and spreading devices, the court concludes that the DePuy machine taught several concepts that were eventually embodied in the Lundahl I and II patents. The DePuy machine utilized not only horizontal compaction, but also compressed the hay vertically, though to a limited extent, through the use of the gate-like presses and supplemental compressors. The DePuy machine also contained a false front used to slide the finished stack onto the ground through a tailgate that would open and tilt to allow the stack to slide out of the wagon.

Hesston contends that the DePuy machine was not prior art because it lacked the other devices that picked up, elevated, and spread the hay. In addition, Hesston contends that the DePuy machine utilized gate-like presses

that swung in a curvilinear path rather than applying pressure from a perfectly vertical direction; that is, pressure applied along a line perpendicular to the plane. The DePuy machine, however, taught the concept of using vertical compression, though directed from other than a 90 degree angle, to compact the hay to enhance the structural integrity of the haystack and to form a surface on the top of the stack that would be weather-resistant. When the patent applicant seeks a patent on a combination of old elements, the applicant cannot eliminate any one of the old elements from consideration as prior art merely because any one individual old element does not include certain portions or all of the combination of elements.

Deere also cites the 1966-67 Lundahl prototype hay-stacking wagon, on which Garrison and Lundahl combined their efforts, as prior art to the Garrison I and II patents. Deere contends that the prototype taught the basic mechanical concepts embodied in the DePuy machine and attempted to add a mechanism to allow "on-the-go" haystacking. Hesston contends that the prototype wagon with its "pelican beaks" constituted merely an abandoned, unsuccessful experiment. Based upon the court's determination that the DePuy machine was prior art, the 1966-67 Lundahl prototype, as an attempted improvement on the DePuy machine, is a *fortiori* prior art to the Garrison patents. The 1966-67 prototype haystacking wagon taught the essential concepts of vertical compression which had been embodied in the earlier DePuy machine as well as the prior art bearing upon pick up, elevation, even distribution, compaction, and discharge as more particularly described in the Hale, Isom, and Sutherland patents. As such, the 1966-67 prototype was prior art to the Garrison patents and Garrison should have disclosed that prior art in the processing of his patent application.

To determine the difference existing between the prior art and the Lundahl I, II and Garrison I, II patents, the court here sets forth what those patents claim. The essential claims at issue in the Lundahl I and II patents, which claim machine and method, disclose that the "hay loader" described therein had the following functions: (1) to pick up the hay crop from the field, (2) to elevate the crop to a position where it could be deposited in the bed of the wagon, (3) to spread the crop evenly in the wagon bed, (4) to use a press structure to confine the hay in the wagon, (5) to use a power press to compact the hay crop vertically at intervals as it accumulated in the wagon bed, and (6) to discharge the finish stack on the ground.

The essential claims at issue in the Garrison I and II patents, which claim machine and method, disclose that the "loose hay wagon" described therein had the following functions: (1) to pick up the hay crop from the field, (2) to elevate the crop to a position over the wagon bed by means of a blower-type loader, (3) to blow the hay into the wagon bed and spread the hay evenly in the bed as it is blown, and (4) to compress vertically the hay at intervals as it is deposited in the wagon bed.

The functions of the four minor patents in issue have already been described hereinabove in relation to Deere's prior art references. The basic function of these four minor patents has also been described in the introductory material to this decision and will not be repeated at this point.

Obviousness of the Differences

Hesston argues that its patents combine old elements into a device that produces a new and advantageous result. The prior art cited by Deere and by the patent examiners clearly reveals that each element of the Hesston combina-

tion patents and the four minor patents was disclosed in earlier patents. The Hale and Isom patents, for example, taught picking up hay from the field and elevating it into a confining chamber. Hale also taught even distribution through a device over the open bin that reciprocated back and forth. The Isom and Sutherland British patents respectively taught the use of a "tamping member" and a vertical compression chamber.

The Tenth Circuit, in *McCullough Tool Co. v. Well Surveys, Inc.*, 343 F.2d 381, 393 (10th Cir. 1965), set forth the test for determining when a combination of old elements would constitute a patentable device:

"It is universally held that a mere aggregation of a number of old parts or elements which, in the aggregation, perform or produce no new or different function or operation than previously performed or produced by them, is not a patentable invention. . . . The test of whether a particular patent is a mere aggregation and invalid or a combination and valid has been variously stated. Generally, where elements old in the art are united in such a way that a new and useful result is secured or an old result is attained in a more facile, economical and efficient manner, there is a patentable combination."

The Tenth Circuit recently reaffirmed this test of patentability for combination patents in *Moore v. Schultz*, 491 F.2d 294, 299 (10th Cir.), cert. denied, 419 U.S. 930 (1974).

In *Rutter v. Williams*, 541 F.2d 878 (10th Cir. 1976), the court denied patent validity to a patent combining old elements on the basis of two recent Supreme Court decisions in *Dann v. Johnston*, 425 U.S. 219 (1976), and *Sakraida v. Ag Pro, Inc.*, 425 U.S. 273 (1976). The court in *Rutter* followed the test whether the combination pro-

duced a "new and different function." 541 F.2d at 881. Based upon *Rutter*, a combination patent must produce a synergistic result to be patentable and valid; that is, the result achieved by the patent is unexpected when the individual old elements are considered individually by one skilled in the art.

In *Dann v. Johnston*, *supra*, the Court reversed the Court of Customs and Patent Appeals because the differences between the prior art and the purported inventions were obvious to one reasonably skilled in the art. As the Court explained:

"[T]he mere existence of differences between the prior art and invention does not establish the invention's nonobviousness. The gap between the prior art and the respondent's system is simply not so great as to render the system nonobvious to one reasonably skilled in the art."

425 U.S. at 230. Similarly in *Sakraida v. Ag Pro, Inc.*, *supra*, the water flush system to remove cow manure from barns "simply arranges old elements with each performing the same function it had been known to perform, although perhaps producing a more striking result than in previous combinations." *Id.* at 282.

While conceding that the patents in issue represent combinations of old elements, Hesston argues that the patentable, nonobvious difference between the prior art and Hesston's claimed patents is in the use of vertical compression to form a weather-resistant stack that is structurally durable while preserving hay quality. Hesston relies heavily upon "secondary considerations" under the *Graham* test to demonstrate nonobviousness and patentability such as economic success, widespread acceptance of the device by farmers, and reduction to practice of a workable ma-

chine after several frustrating failures. These "secondary considerations" alone, however, are insufficient to overcome the necessary conclusion of obviousness or nonobviousness based on the three-pronged *Graham* analysis. See *Timely Products Corp. v. Arron*, 523 F.2d 288, 294 (2d Cir. 1975).

Having determined the scope and content of the prior art and the differences between the prior art and the purported patentable devices, the court now proceeds to consider whether such differences are obvious to one reasonably skilled in the art. The court approaches this question mindful of the need to avoid using hindsight to determine obviousness, but considers the issue in light of the knowledge available to one reasonably skilled in the art at the time the patents in issue were sought. See *Graham v. John Deere Co.*, *supra* at 36.

To apply the third prong of the *Graham* test and determine what would be obvious to a person reasonably skilled in the art, the Court in *Dann v. Johnston*, *supra*, explained this prong of the *Graham* test as follows:

"In the context of the subject matter of the instant case, it can be assumed that such a hypothetical person would have been aware both of the nature of the extensive use of data processing systems in the banking industry and of the system encompassed in the *Dirks* patent. While computer technology is an exploding one, '[i]t is but an even handed application to require that those persons granted the benefit of a patent monopoly be charged with an awareness' of that technology."

425 U.S. at 230 (citing *Graham v. John Deere Co.*, *supra* at 19). Accord *Rutter v. Williams*, *supra* at 881 (applied *Dann* requirement that "one granted the benefit of a patent

monopoly is charged with an awareness of the existing technology"). As stated in *Application of Winslow*, 365 F.2d 1017, 1020 (C.C.P.A. 1966):

"We think the proper way to apply the 103 obviousness test to a case like this is to first picture the inventor as working in his shop with the prior art references—which he is presumed to know—hanging on the walls around him."

In determining patentability of Hesston's combination patents, the court has duly weighed the admonition of the Supreme Court in *Great Atlantic & Pacific Tea Co. v. Supermarket Equipment Co.*, 340 U.S. 147, 152-53 (1950) that:

"Courts should scrutinize combination patent claims with a care proportioned to the difficulty and improbability of finding invention in an assembly of old elements. . . . A patent for a combination which only unites old elements with no change in their respective functions . . . obviously withdraws what already is known into the field of its monopoly and diminishes the resources available to skillful men."

The Court recently reaffirmed this admonition on combination patents in *Sakraida v. Ag Pro, Inc.*, *supra* at 281.

In light of the scope and content of the prior art of which one reasonably skilled in the art is presumably aware, the difference claimed in the Hesston patents in issue would be obvious to one reasonably skilled in the art. Hesston's patents do not achieve a synergistic result (see, e.g., *United States v. Adams*, 383 U.S. 39 (1966)), that would be nonobvious to one reasonably skilled in the art. While Hesston's patents certainly demonstrate the work of a skilled mechanic, the differences between these patents

and the prior art do not achieve a nonobvious, patentable difference. The Hesston patents have combined old elements that continue to function in the same capacity as they did outside Hesston's combinations, and they do not perform a new and different function even though Hesston wagons succeeded in producing a striking result by combining the old elements.

B. Novelty Under Section 102(b)

The Lundahl and Garrison patents are also unpatentable for failure to meet the requirements of § 102(b) in light of the sale of the DePuy machine. While the court has decided that the elements of fraud on the Patent Office are not present in this action, particularly the intentional failure to disclose prior art, the court nevertheless has concluded that the DePuy machine constituted prior art that had been sold more than one year prior to the Lundahl and Garrison patent applications. Section 102(b) states:

"A person shall be entitled to a patent unless—

 (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States"

The court has carefully and thoroughly examined the exhibits bearing upon this issue and has weighed the facts in light of the legal principles presented by counsel. The court has determined that the DePuy machine was prior art in teaching haystacking concepts and techniques that were eventually improved and refined in the Lundahl and

Garrison patents. Hesston, Lundahl, and Garrison were fully familiar with the DePuy machine and with its possible implications for subsequent patent applications. Nevertheless, the Lundahl and Garrison patent applications were filed more than one year after the sale of the DePuy machine.

The record does not support Hesston's contention that the DePuy machine fell within the experimental use exception initially formulated in *City of Elizabeth v. American Nicholson Pavement Co.*, 97 U.S. 126, 134 (1877), that "public use" in the patent statutes does not include "use of an invention by the inventor himself, or of any other person under his direction, by way of experiment, and in order to bring the invention to perfection" The advertisement and sale of the DePuy machine did not contain "an express or clearly implied condition that the sale or offering is made primarily for experimental use." *Robbins Co. v. Lawrence Manufacturing Co.*, 482 F.2d 426, 433 (9th Cir. 1973). *Accord Dart Industries, Inc. v. E.I. DuPont de Nemours & Co.*, 489 F.2d 1359, 1366 & n.13 (7th Cir. 1973), cert. denied, 417 U.S. 933 (1974). The court, therefore, holds that § 102(b) renders the Garrison and Lundahl patents unpatentable in light of the sale of the DePuy machine more than one year prior to the filing of the patent applications, which placed the concepts embodied therein into the public domain.

The court does not reach the issue of patent infringement since that issue is moot in light of the court's determination that the Hesston patents are invalid under § 103 and § 102(b).

Wherefore, the court enters judgment declaring that the Hesston patents in issue are unpatentable over prior art since they are obvious under § 103 and the DePuy ma-

chine was prior art in the public domain more than one year prior to the patent applications for the Garrison and Lundahl patents.

DATED this 3 day of May, 1977.

/s/ Aldon J. Anderson
Aldon J. Anderson
United States District Judge

UNITED STATES COURT OF APPEALS
TENTH CIRCUIT

Nos. 77-1561 and 77-1562

DEERE & COMPANY,
Plaintiff-Appellee and Cross-Appellant,
v.

HESSTON CORPORATION,
Defendant-Appellant and Cross-Appellee.

Appeal from the United States District Court for the District of Utah, Central Division (D.C. No. C 299-73)

(Filed March 9, 1979)

Dugald S. McDougall, Chicago, Illinois (Dennis McCarthy and Rand L. Cook, Salt Lake City, Utah, and Theodore R. Scott, Chicago, Illinois, on the brief), for Plaintiff-Appellee and Cross-Appellant.

Gordon D. Schmidt of Schmidt, Johnson, Hovey & Williams, Kansas City, Missouri, for Defendant-Appellant and Cross-Appellee.

Before HOLLOWAY and DOYLE, Circuit Judges, and STANLEY,* Senior District Judge.

DOYLE, Circuit Judge.

I. THE PLEADINGS AND PROCEEDINGS

Plaintiff-appellee Deere & Company instituted this action in the United States District Court for the District of Utah. A declaratory judgment to declare certain patents invalid was prayed for against the Hesston Corporation of Hesston, Kansas, the owner of United States Patent No. 3,556,327, entitled "Loose Hay Wagon," issued January 19, 1971, and filed by Harold Keith Garrison April 14, 1969; also, United States Patent No. 3,728,849, entitled "Hay Loader," issued April 24, 1973, on application filed November 14, 1969, by Ezra Cordell Lundahl.

From further allegations in the complaint it appears that Deere has designed and built a hay wagon, has exhibited it and offered it for sale at meetings of farm implement dealers, and is now manufacturing and selling in competition with a hay wagon manufactured and sold by Hesston, named StakHand.

It is further alleged that Hesston notified Deere that it considered the Deere implement to have infringed on both the Garrison and Lundahl Patents. Deere maintains in furtherance of its complaint that the Hesston and Lundahl Patents are invalid and so not infringed; also, it maintains that the Garrison and Lundahl Patents were obtained through fraud on the Patent Office and that they are invalid because of the sale of a prototype of the hay loader in the Lundahl Patent.

*Of the District of Kansas, sitting by designation.

The answer on behalf of the defendant-appellant denies the allegations as to the invalidity, fraud and prior sale of a prototype and contains a counterclaim alleging infringement. A supplemental counterclaim lists a series of Hesston Patents. These include those mentioned above together with improvement patents.¹

Plaintiff-appellee Deere has filed a reply to the fourth supplemental counterclaim as a result of which all matters are fully in issue.

This matter was tried to the court before United States District Judge Anderson, District of Utah, who ruled all eight patents of Hesston Corporation invalid under 35 U.S.C. § 102(b) and 35 U.S.C. § 103. The district court essentially ruled that the patents in issue were invalid for obviousness as provided in 35 U.S.C. § 103 and known to the public for more than one year before the patent application under § 102(b).

The trial court said that the controversy centered around four patents: Lundahl Patent No. 3,728,849, a haystacking method; Lundahl Patent No. 3,828,535, a haystacking machine (Lundahl I Patent and Lundahl II Patent, respectively). The other two primarily involved are the

1. The numbers, names and dates of issue are as follows:

Number	Title	Patented
3,556,327	Loose Hay Wagon	January 19, 1971
3,728,849	Hay Loader	April 24, 1973
3,757,687	Press Mechanism for Stacking Implements	September 11, 1973
3,828,535	Hay Loader	August 13, 1974
3,842,732	Tailgate Control for Stackers	October 22, 1974
3,847,072	Loose Hay Wagon	November 12, 1974
3,878,670	Stack Forming Loader	April 22, 1975
3,899,966	Machine for Loading, Stacking and Unloading Crops	August 19, 1975

Garrison Patent No. 3,556,327, a haystacking machine, and the Garrison Patent No. 3,847,072, a haystacking method (the Garrison I Patent and Garrison II Patent, respectively).

II.

HISTORY AND BACKGROUND

This controversy had its origins in 1960 and the years following.

The Lundahls, Cordell and Ezra, son and father respectively, were engaged in the manufacture of loose hay wagons. Cordell, the son, saw the need for a machine that would transform loose hay into closely packed haystacks which could either be left in the field or moved to a storage place.

Lundahl's first machine was a simple wagon which compressed the hay. It was loaded by a machine known as a Farmhand grapple fork or a Farmhand. This latter was pulled by a tractor through the hay field where it would pick up loose hay and deposit it into the wagon. This wagon had high side walls and a front panel which moved toward the rear and in so doing compacted the hay against the rear doors. Lundahl discovered that this mechanism loaded the hay unevenly and without a uniform density. The result was disintegration of the hay stack. There were other deficiencies. The loading was a separate function; there was a lack of integrated method of pulling the wagon down the windrow. The operation was in two separate steps, in other words. After the loading there followed the horizontal compaction which was also in stages. Each time some hay was loaded it had to be compressed and then more hay would be added and compressed until the wagon was filled. While producing one

complete haystack, this process resulted in a stack which tended to separate and fall apart. To overcome this, Lundahl added vertical compression units consisting of two gate-like top presses which would be set as extensions of the side walls and would swing down from the top on hinges powered by hydraulic compressors. Notwithstanding this, though, the principal compression was the horizontal force created by compressing the crop against the back walls of the wagon.

In February 1966, Lundahl advertised in a farm journal a one-man automatic feeding system for long hay. While the advertisement said that the machine would stack and compress loose hay from the windrow into neat uniform stacks without any manual handling, at this time an integrated system had not been developed: The wagon still had to be loaded separately. One Warren DePuy purchased one of these incomplete machines. It lacked the attachment which would make the machine self-loading. This was promised at a later date. This is here referred to as the DePuy machine and it was put to use during the 1966 haying season and for part of the 1967 season, but had mechanical difficulties as a result of which DePuy sued the Lundahl Corporation for breach of warranty. After this the machine was abandoned by DePuy.

In 1966, the Hesston Corporation, defendant-appellant here, bought the assets of the Lundahl Corporation.² Hesston was very much interested in the stacking machine idea and pursued it through one of the engineers for Hesston, Keith Garrison, who worked with Cordell Lundahl on improving the design. Prior to this, Lundahl had come to the realization that vertical compaction was desirable. This led to the development of the swinging top-gates

2. A brief description of the Hesston Corporation is set forth in Appendix I.

which came down on the loaded haywagon and also the addition of the tuckers to the undersides of the hinged gates on the earlier prototype. So the research was pursued along the line of developing the vertical compaction. Testing along this line continued through 1968 with several prototypes, including a 1966-67 prototype with redesigned top-presser gates integrated with a crop pick-up and distribution system. Eventually Garrison came up with a method of continuous loading of hay into a moving wagon by using the blower duct system with a dispersal mechanism which served to spread the hay evenly. Garrison also discarded the two-gate approach and adopted a single unit, described as an inverted U, which is used to apply downward pressure. These innovations were said to have produced "real good" results which yielded stacks of uniform density and having a self-supporting nature. Also, the stacks were better shaped from the standpoint of shedding water. This machine was ultimately marketed.

Hesston, in the year 1969, commenced the production of the StakHand 60, which made six ton stacks. Some smaller editions or models were added later, such as the StakHand 30, for forming three ton stacks, and the StakHand 10, which produced a one ton stack. Improved models were identified with an "A" after the number.

Deere and Company started selling machines which made one ton stacks, three ton stacks and six ton stacks, all of which appeared to be based on the same design as the Hesston machine. This activity produced the present controversy.

The application for patent on the Garrison I was filed in 1969. It matured January 19, 1971.

At the very outset the Garrison II Patent was rejected on the basis of prior art. The Patent Office ruled that Garrison II was the same as the Sutherland British

Patent, the only difference being its blower conveyor. After this, Hesston offered an amendment claiming that it was not based on any prior art and saying that "it is absolutely new to provide a hay gathering or collection feature in a press as its initial function in cooperation with the main crop receiving body." The Patent was finally issued August 13, 1974.

The Lundahl Patents I and II suffered somewhat the same fate. Lundahl I was filed in 1969 and rejected in 1972. The rejection was based on the prior issuance of Garrison I. Lundahl, by swearing back, established that he had completed his invention prior to the date the Garrison I Patent was filed. The application was accepted and the patent matured in 1973.

The Lundahl II, which was also based on the Garrison I, was rejected by the examiner. Again, this objection was overcome by swearing back, but ultimately some but not all of the claims were allowed.

These four described patents, together with four so-called minor patents, were all ruled invalid, and basically these rulings are the issues for consideration on this appeal.

III.

THE JUDGMENT OF THE TRIAL COURT

Judge Anderson's opinion, which is published in 456 F. Supp. 520 (D. Utah 1977), constitutes thorough and careful workmanship, and in writing this opinion we have made full use of it. The opinion considers the following issues:

A. Fraud on the Patent Office.

The contention of plaintiff-appellee Deere that fraud was perpetrated on the Patent Office.

B. The patentability of the Garrison, Lundahl and improvement patents. Included was the nonobviousness under § 103, and prior sale or use under § 102(b).

Essentially the contention of fraud perpetrated on the Patent Office is predicated on Hesston's failure to disclose in the application for the Garrison I and II Patents the prior art contained in the Lundahl prototype haystacking wagon which was merely mechanically improved by Lundahl originally, and also the failure to disclose in the Lundahl I and II proceedings the sale and development of the DePuy machine.

The trial court pointed out that under McCullough Tool Co. v. Well Surveys, Inc., 343 F.2d 381, 394 (10th Cir. 1965), Deere had the burden of establishing the obtaining of the four main patents by the use of fraud. Here the form of the fraud was nondisclosure and it would have to appear that the Patent Office would have rejected the Hesston application but for the fraudulent nondisclosure. See Norton v. Curtiss, 433 F.2d 779, 795 (C.C.P.A. 1970). The trial judge was not convinced that the Patent Office would have rejected the four major patents but for the nondisclosure, nor was the court able to conclude that there was any willful, intentional, wrongful or even reckless conduct in the failure to disclose. The court concluded as follows:

Based on the present state of the record, the court concludes that the evidence is insufficient to impute to Hesston and its attorneys a fraudulent intent or gross and reckless conduct that would justify a finding of patent invalidity due to a purported fraud on the Patent Office. Hesston and its attorneys exercised good faith judgment on whether to include the prior

Lundahl wagons as prior art in the Lundahl I, II and Garrison I, II patent applications. That good faith judgment, based on a strict notion of the scope of the intended patent in reference to the prior art, though erroneous, will not render the patent invalid. The court, therefore, denies Deere a declaratory judgment that the four major patents in issue are invalid due to Hesston's alleged fraud on the Patent Office.

On the question of invalidity of the patent as having been unpatentable under the prior art, the trial court reviewed the history of the particular provision noting that prior to the Patent Act of 1952, the requirements were that the device was to be "new and useful." Cited was Hotchkiss v. Greenwood, 52 U.S. (11 How.) 248 (1851), where the Supreme Court in defining the term "new" stated that "to be patentable a device must demonstrate 'skill and ingenuity' beyond that possessed by 'the skillful mechanic.'"

The 1952 Act, the court pointed out, reenacted the "new and useful" formula of patentability in the form of the terms novelty and utility in place of the requirement of the invention test by introducing nonobviousness.

The trial court concluded that the standards for determining patentability of the Hesston's Patents were, then, utility, novelty and nonobviousness. The court also concluded that Deere had not seriously challenged the patents as not having utility.

IV.

WHETHER THE DETERMINATION BY THE TRIAL COURT THAT THE PATENTS FAIL FOR OBVIOUSNESS IS SUPPORTED BY THE FACTS AND THE LAW OF THE CASE³

The trial court relied on the case of *Graham v. John Deere Co.*, 383 U.S. 1 (1966). Obviousness under § 103, it was said in *John Deere*, is to be determined in the light of the prior art by studying the differences between the prior art and the claims at issue and by resolving the level of ordinary skill in the pertinent art. Against this background the obviousness or nonobviousness of the subject matter is determined. The Court, in *John Deere*, said that "Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented." 383 U.S. at 18-19. These could not, however, substitute for lack of invention.

In subsequent cases the Supreme Court has continued to apply the *Graham* test of patentability under § 103. The more important of the Supreme Court cases on the subject are *Sakraida v. Ag Pro, Inc.*, 425 U.S. 273, 280 (1976), and *Dann v. Johnston*, 425 U.S. 219, 230 (1976).

The court then goes on to consider the Hale, Isom and Sutherland Patents cited as prior art by Deere. Hale dates back to 1887 and describes a hay-cocking machine, the main function of which was to gather hay or other fodder up from a field and discharge the fodder to the

3. Appended to the opinion is a discussion of the operation of the Lundahl and Garrison machines. We hope that it will provide a better understanding of the functions of the patents in suit.

ground in compact piles or cocks for protection against storms. It sounds familiar. The Hale claims 1 through 4 state that the machine gathered the hay from the ground, elevated it into an open bin, provided distribution reciprocating back and forth over the open top together with a hinged bottom to drop the hay "cock" on the ground.

The Isom Patent, which is dated in July 1918, describes a mechanical hay shocker which, in combination, comprised a hopper, delivery means discharging into the hopper, tamping members within the hopper, a draper forming the bottom of the hopper and a facility for stopping the delivery means. The tamping member operated, the doors opened, and the draper started in motion.

The Sutherland Patent described a harvesting machine which provided an improved construction and a method by which the hay can be compressed to form a stack and then deposited on the ground. This Sutherland Patent, dated in 1964, was the examiner's prior art reference for rejection of the Garrison II Patent application. This British patent was said by the trial court to clearly teach vertical compression of the hay to form a stack. Sutherland had a wheeled trailer attached to a tractor with a compression chamber mounted on the trailer into which hay could be "charged," the chamber being open at the top and having a rear wall which could be opened, and a hydraulically operated compression member by which the hay introduced into the chamber could be compressed so as to form a stack which could then be ejected from the chamber when the rear wall was opened.

A number of other prior art patents were cited, particularly the DePuy machine and the Lundahl prototype from which Garrison and Lundahl worked in order to perfect the vertical compression as well as pickup, elevation, even distribution, compaction and discharge.

McCullough Tool Co. v. Well Surveys, Inc., 343 F.2d 381, 393 (10th Cir. 1965), articulated a somewhat liberal test governing an aggregation of old parts so as to produce a patentable invention. The opinion said:

The test of whether a particular patent is a mere aggregation and invalid or a combination and valid has been variously stated. Generally, where elements old in the art are united in such a way that a new and useful result is secured or an old result is attained in a more facile, economical and efficient manner, there is a patentable combination. *Bewal, Inc. v. Minnesota Mining and Mfg. Co.*, 10 Cir., 292 F.2d 159; *Oliver United Filters v. Silver*, 10 Cir., 206 F.2d 658, cert. denied, 346 U.S. 923, 74 S.Ct. 308, 98 L.Ed. 416.

343 F.2d at 393.

It is noteworthy that this court also said, just prior to the above quote, that:

It is universally held that a mere aggregation of a number of old parts or elements which, in the aggregation, perform or produce no new or different function or operation than previously performed or produced by them, is not a patentable invention. *Great Atlantic & Pacific Tea Co. v. Supermarket Equipment Corp.*, 340 U.S. 147, 71 S.Ct. 127, 95 L.Ed. 162; *Admiral Corporation v. Zenith Radio Corp.*, 10 Cir., 296 F.2d 708; *Consolidated Electro. Corp. v. Midwestern Instruments*, 10 Cir. 260 F.2d 811.

343 F.2d at 393.

It would appear that the Supreme Court has recognized in *Dann v. Johnston*, 425 U.S. 219 (1976), that commercial success and failure of others may be relevant in determining obviousness or nonobviousness. However, the

Supreme Court in *Dann v. Johnston, supra*; *Sakraida v. Ag Pro, Inc.*, 425 U.S. 273 (1976); and *Great Atlantic & Pacific Tea Co. v. Supermarket Equipment Corp.*, 340 U.S. 147 (1950), also emphasized that commercial success without invention does not suffice. In *Sakraida*, the invention, a system to flush cow manure from barn floors, was held to be obvious. In *Dann v. Johnston, supra*, a computer system which provided recordkeeping for bank checks and deposits coded into categories by the bank customer was not patentable because it was obvious. The point was also made in *Sakraida* that in order for the combination of old elements to prevail, there must be a synergistic effect, that is, an effect greater than the sum of the several effects taken separately. The trial court was mindful of the Supreme Court's admonition in *Great Atlantic & Pacific Tea Co. v. Supermarket Equipment Corp., supra*, that courts should scrutinize a combination of patent claims with care proportioned to the difficulty and improbability of finding an invention in an assembly of old elements. The patent is supposed to add to the sum of useful knowledge, the Supreme Court said, and patents are not to be sustained when their effect is to subtract from former resources freely available to skilled artisans. The trial court was cognizant of this in determining whether the differences were obvious to one reasonably skilled in the art, pointing out that one who makes such an invention is charged with awareness of the existing technology.

The trial court was not incorrect, as we view it, in its holding that the Hesston Patents did not achieve a synergistic result that would be nonobvious to one reasonably skilled in the art. On the contrary, the court concluded that Hesston's Patents demonstrated the work of a skilled mechanic, the difference being that these patents do not achieve a nonobvious patentable difference from the prior

art since they have combined old elements which continue to function as they did previously. The old elements do not in combination perform a new and different function even though the wagons did succeed in producing a striking result by combining the old elements.

In our view, the strongest point in Hesston's case rests in its contention that a new and different result, which realized great commercial success, flowed from the combination of the old elements and that this overcomes the argument that the result was invalid for obviousness. Nevertheless, we must disagree with Hesston's position. It is our conclusion, as indicated above, that the trial judge correctly appraised the prior art and the combination in the light of the commercial success of the patents.

The issue in question has given us pause and concern, but we are in a less favorable position than was the trial court in terms of making the present evaluations.

The other issues determined by the trial court, which we have described in detail, fraud on the Patent Office and prior sale or use under § 102(b), are supported by the evidence. Although we have examined them for possible plain error, none is perceived.

One further matter which we deem it necessary to consider is whether the trial court erred, as Deere contends, in denying the request for lawyers' fees. Here again, our disposition is to accept the finding and conclusion of the trial court, which was not convinced that this was an extraordinary case, whereby Deere would be entitled to fees. After all, Hesston was the patentee in this case and it surely had the right to litigate without being assessed Deere's attorneys' fees, in the absence of any extraordinary actions, like fraud, by Hesston.

The judgment of the district court is affirmed.

APPENDIX I

The Hesston Corporation, of Hesston, Kansas, is a rapidly growing corporation which primarily manufactures farming and industrial equipment. In the past ten years it has grown nearly tenfold. In fiscal 1966, Hesston reported net sales of \$25,466,000, a net income of \$1,148,000, and total assets of \$13,440,000. In fiscal 1975, it reported net sales of \$207,857,000, a net income of \$9,572,000, and assets totaling \$161,641,000. In the same period the number of persons it employed rose from an average of 1,050 to an average of 4,581.

By way of comparison, in fiscal 1975 Deere & Company reported net sales of \$2,955,204,000, a net income of \$179,-073,000 and total assets listed at \$2,440,829,000. At the close of 1975 Deere had 53,794 employees.

Both companies produce a wide range of products in general categories which include farm equipment, industrial equipment, and office and consumer products. Both operate in the United States and abroad. As an example of the level of diversity of these two corporations, Deere makes machines ranging from snowmobiles and lawn tractors to heavy duty graders, large tractors, and combines. Hesston also has a wide range of products. It makes, *inter alia*, back-hoes, waste disposal units (compactors, incinerators, etc.), snowblowers, harvestors, office furnishings, and of course, windrowers and stack forming machines.

Hesston's largest division is farm equipment which, in 1975, accounted for 96% of Hesston's net sales. The hay stacking machines here at issue fall into this category. The hay handling equipment product line, in 1975, produced 37% of Hesston's net sales. This 37% is a figure which rose from 16% in 1971. Hesston's second leading product

line consists of windrowing machines, which, in 1975, accounted for 24% of Hesston's net sales.

Hesston is a corporation of global scope. It operates plants in France and Italy, has licensees in Australia, Argentina, and Brazil, and distributors throughout the world.

APPENDIX II

OPERATION OF THE LUNDAHL AND GARRISON MACHINES

The Lundahl Machine.

In this design, two parts, a loader and a compressing wagon, comprise the machine. The loader loads the hay from the windrow by a rotary pickup unit which has tynes or fingers rotating on a horizontal axis. This unit delivers the hay to an "endless" conveyor belt which elevates the crop. Neither aspect is particularly novel and the applicant notes this by providing that these elements may be powered in any suitable fashion.

The elevator unit consists of two parallel endless chains connected by cross slats. This unit inclines up toward the conveyor assembly which extends horizontally rearwards, from the elevator, and is located over the chamber in which the hay is to be dropped. An endless belt which runs up the elevator and over the conveyor actually carries the crop. At the back end of the conveyor is a roller which moves longitudinally back and forth and serves to disperse the hay to the front and rear of the chamber body.

The elevator/loader housing and the main body are connected in a pivotal fashion allowing the body to be shifted from side to side without shifting the loader. This allows the hay to be dispersed from side to side in the

wagon as the wagon is shifted. (This pivotal mechanism also permits better operation over uneven terrain by allowing the unit to twist on a longitudinal axis so that while the loader cants go the left the body lists to the right, and vice versa.)

The compression is achieved by the swingable gates, and tuckers attached thereto, which are a part of the main body. In the loading stage each gate is set in an upward position, as an extension of the side of the body, and aids in channeling hay from the conveyor into the body.

In the compression stage, the gates swing in and down, compressing the hay towards the floor. The tuckers add pressure to the hay near the walls. The resulting stack is packed and rounded on the top thus having the desirable quality of readily shedding moisture.

In unloading, the loader/elevator housing and the main body can be separated. This allows the operator to tow only the body to the unloading area. Offloading is accomplished by tilting the body down so that the rear rests on or near the ground, opening the tail gate, and pushing the stack by means of the false front.

The Garrison Machine.

In this machine the loading component is again housed at the front of the body. The crop is picked up by a drum rotating on a horizontal axis. The drum has projecting tynes which actually pick up the crop. The hay is then delivered to another rotating drum, placed superjacent to the pickup drum, which has retractable fingers which carry the crop. This latter device delivers the hay into the path of a fan. The fan, housed in a duct, blows the hay upward. The hay, channeled by the duct housing, is directed up and then back into the wagon.

The loading system moves laterally back and forth at all times during the loading thus causing the crop to be dispersed from side to side in the wagon. At the outlet of the duct is a deflector plate which the operator may cause to swing up and down, as the blower swings back and forth, allowing the hay to be distributed to the front and back of the receiving body. These two oscillating elements are calculated to produce even distribution of the crop in the body.

The body has, as an integral part, a press. The press consists of a pitched roof (one that slopes down from both sides of the longitudinal center line), sides, and a rear wall which also functions as a gate. When the press is raised, the body and the press form a closed chamber into which the hay is blown. When the chamber is full, i.e., when the hay reaches the blower outlet near the top and front of the body, the loading is halted and the press activated. The press descends vertically upon the mass of hay. This process is repeated until the wagon is full of pressed hay.

When the stack is ready to be offloaded, the press does not have to be raised as both the back wall of the main chamber and the back wall of the press open as gates. The gates are raised and the body tilted so that the rear rests on or near the ground. The wagon is pulled forward and, at the same time, the stack pushed back and out. This last maneuver is achieved by means of a push bar which is located at or near the front of the wagon, near the base, and runs from one side to the other. The bar is attached to chains which run the length of the body and, when engaged, pull the bar towards the rear.

APPENDIX III

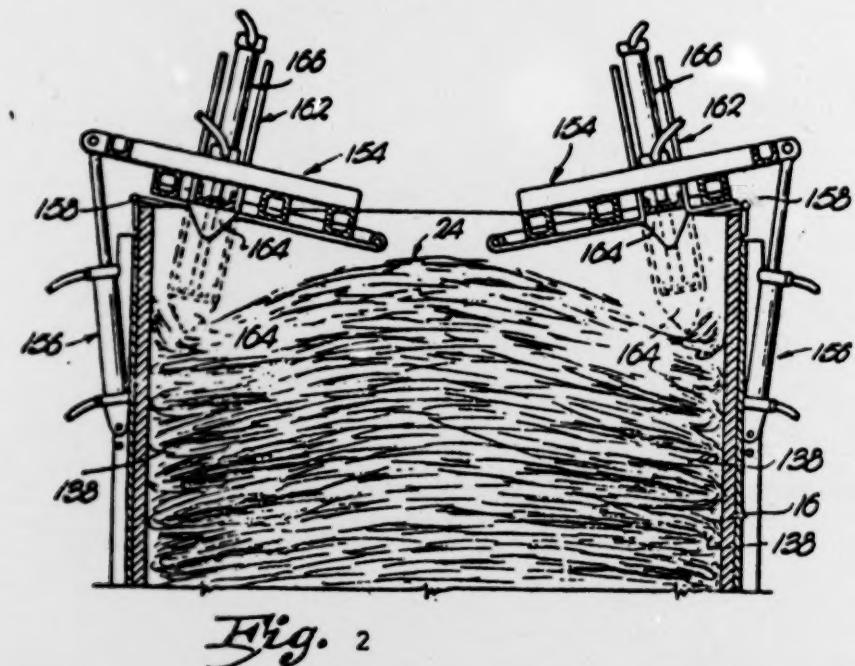
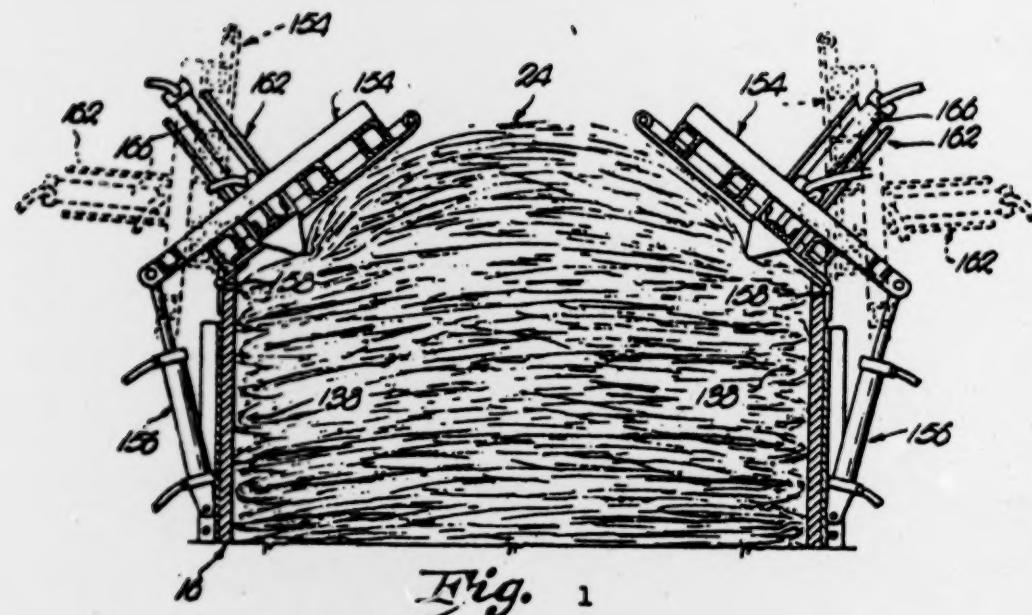
DIAGRAMS OF THE LUNDAHL AND
GARRISON MACHINES

Figures one and two portray the Lundahl machine in the compression stages. The view is from the rear. In figure one the side gates are swinging down to press the hay. In figure two the gates are down and the manner in which the "tuckers" compress the crop near the side walls of the wagon is shown.

Figures three and four are side depictions of the Garrison machine. In figure three the press is raised for loading. In figure four the press has been lowered to form the stack.

Figure five shows the Garrison machine from the rear, figure six the front. One can see, in figure five, the sloping characteristics of the press roof. In figure six the blower/elevator loading apparatus can be seen. The fashion in which the duct oscillates from side to side is also shown.

3.828,535



A46

-3-

3,847,072

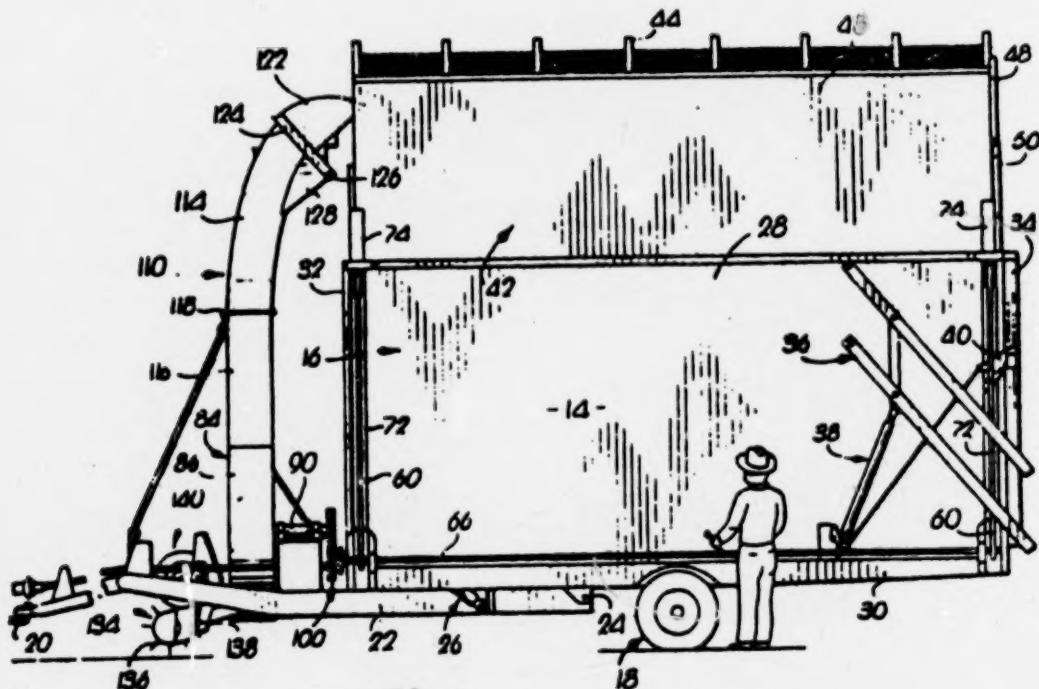


Fig. 3

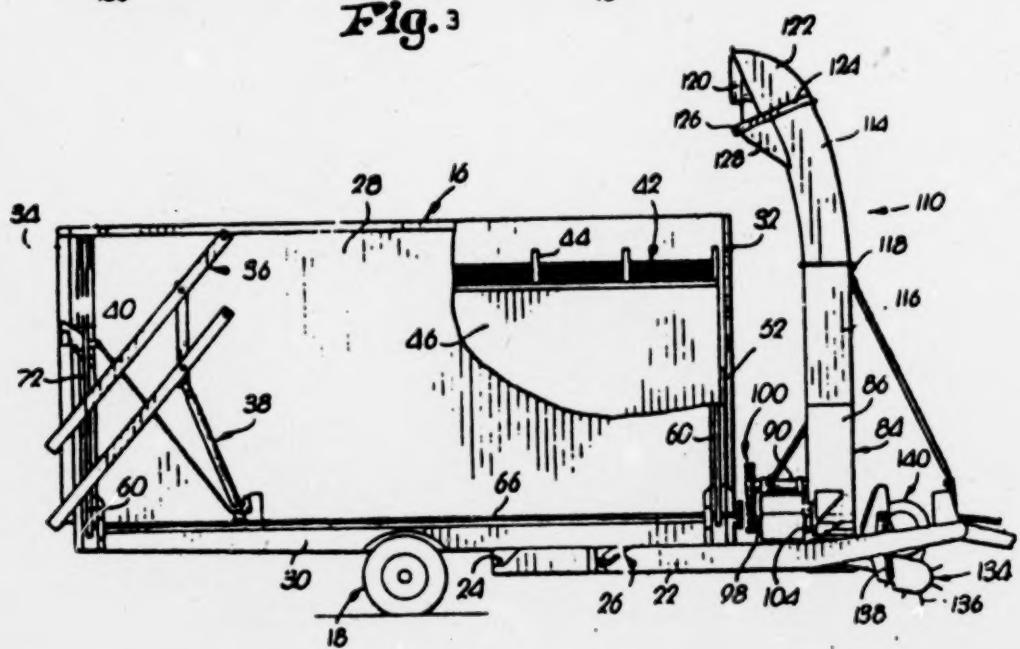


Fig. 4

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3.847.072

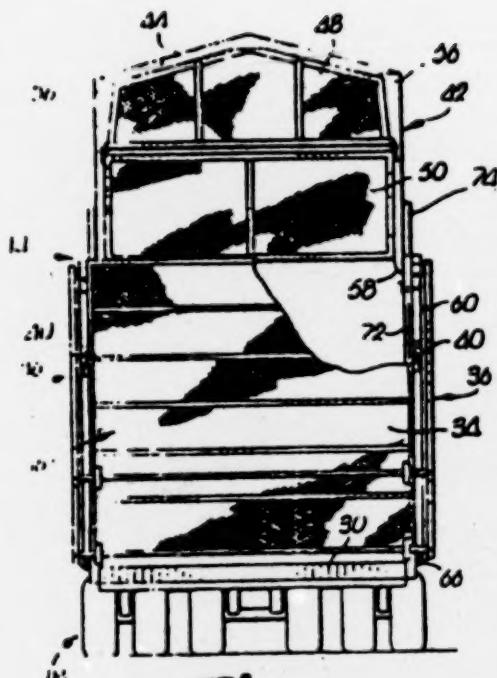


Fig. 5

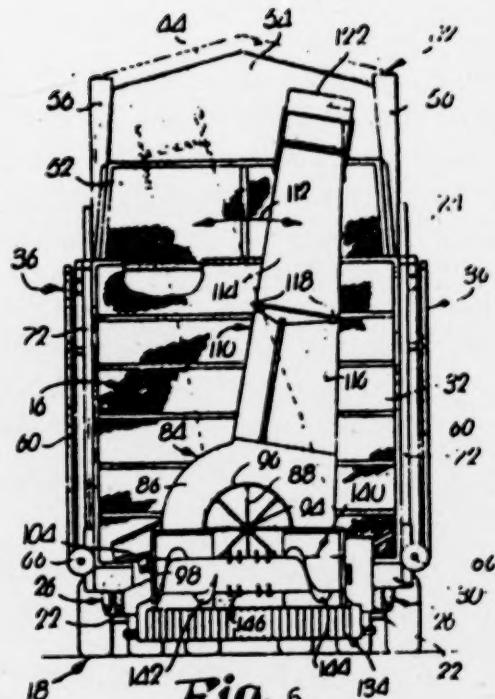


Fig. 6

UNITED STATES COURT OF APPEALS
FOR THE TENTH CIRCUIT

JANUARY TERM - March 9, 1979

Before Honorable William J. Holloway, Jr., Honorable William E. Doyle, Circuit Judges, and Honorable Arthur J. Stanley, Jr., District Judge

No. 77-1561 and No. 77-1562

(D.C. No. C-299-73)

DEERE & COMPANY,

Plaintiff-Appellee-
Cross-Appellant,

vs.

HESSTON CORPORATION,

Defendant-Appellant-
Cross-Appellee.

JUDGMENT

This cause came on to be heard on the record on appeal from the United States District Court for the District of Utah, and was argued by counsel.

Upon consideration whereof, it is ordered that the judgment of that court is affirmed.

A true copy

Teste

Howard K. Phillips, Clerk

By: /s/ Robert L. Hoecker
Robert L. Hoecker
Chief Deputy

PATENT CLAIMS AT ISSUE

3,828,535 (Lundahl)

CLAIM 1. A harvesting machine including a vehicle adapted for advancement across a field having a crop thereon, said vehicle being provided with: a crop receiving body having a bed and a pair of spaced side walls extending upwardly from said bed; a crop pickup unit for lifting the crop off the field as the vehicle is advanced; an assembly including means disposed to receive the crop from said unit, direct the same to a level higher than the bed, and feed the crop into said body; and means for spreading the crop evenly throughout the body as the crop is fed thereinto, said body having structure normally disposed to cooperate with said side walls in confining said crop as the latter is fed into the body, said structure being shiftable with respect to said side walls downwardly toward said bed for compacting the crop from time to time in the body as the crop builds up therein to produce a stack conforming substantially in shape and size with the body.

CLAIM 10. A harvesting machine including a vehicle adapted for advancement across a field having a crop thereon, said vehicle being provided with: a crop receiving body having a bed and a pair of spaced side walls extending upwardly from said bed; a crop pickup unit for lifting the crop off the field as the vehicle is advanced; and an assembly including means disposed to receive the crop from said unit, direct the same to a level higher than the bed, and feed the crop into said body, said body having structure extending along and normally extending upwardly beyond the side walls to cooperate with said side walls in confining said crop as the latter is fed into the body, said structure being shiftable with respect to said

side walls downwardly toward said bed for compacting the crop from time to time in the body as the crop builds up therein to produce a stack conforming substantially in shape and size with the body.

CLAIM 11. The invention of claim 10; and power means on said body operably connected with said structure for shifting the latter.

CLAIM 12. The invention of claim 10, said structure, when in said normal disposition, extending upwardly beyond said side walls for receiving additional crop from the assembly after the crop has built up in the body to the top of the side walls.

CLAIM 13. The invention of claim 12, said structure overlying said additional crop and pressing downwardly thereon during compaction.

3,728,849 (Lundahl)

CLAIM 1. In a harvesting method, the steps of which include: advancing a vehicle provided with a crop-receiving body across a field having a crop thereon; continuously picking up the crop from the field as the vehicle is advanced; continuously raising the picked up crop to a level higher than the bed of the body as the crop is picked up; continuously feeding the raised crop into the body as the crop is raised; spreading the fed crop evenly throughout the body as the crop is fed; shifting a portion of said body which receives said crop downwardly toward said bed from time to time as the crop builds up in the body to compress the crop until a compact stack of the crop is produced, conforming substantially in shape and size with the body; transporting the vehicle with the stack in said body thereof to an unloading area; and unloading the stack from the body and depositing the same in an

upright position on a supporting surface at said area without materially disturbing the shape, size and compactness of the stack.

CLAIM 2. In the invention of claim 1 wherein said fed crop enters the body in a stream that is shifted from time to time fore and aft of said body.

CLAIM 7. In the invention of claim 1 wherein the picked up crop is raised to said level at one end of the body, is then transferred above the bed along a path extending fore and aft of the body, and is then fed by gravity into the body.

CLAIM 9. In the invention of claim 1 wherein the picked up crop is elevated vertically at the forwardmost end of the body to a level above the latter, is then horizontally conveyed rearwardly over the top of the body, and is then dropped vertically in a continuously gravitating stream into the body.

3,556,327 (Garrison)

CLAIM 1. A harvesting machine including a vehicle adapted for advancement across a field having a crop thereon, said vehicle being provided with: a crop receiving body; a pickup for lifting the crop off the field as the vehicle is advanced; apparatus disposed to receive the crop from the pickup and blow the same into said body; means for spreading the crop evenly throughout the body as the crop is blown thereinto; and a vertically reciprocal compressor mounted above the crop for compacting the crop from time to time in the body as the crop builds up therein to produce a stack conforming substantially in shape and size with the body.

CLAIM 2. The invention of claim 1 wherein said apparatus includes a rotary fan having an upright outlet

tube provided with a discharge disposed to direct the crop into the body.

CLAIM 6. The invention of claim 2 wherein said discharge is disposed to direct the crop into one end of the body and is provided with a shiftable deflector for controlling the loading of the crop fore and aft of the body.

CLAIM 7. The invention of claim 1 wherein said compressor comprises a top for said body that is carried by the body, the crop being blown into the body beneath the top when the latter is raised.

3,847,072 (Garrison)

CLAIM 1. The method of making a stack of hay which comprises the steps of: feeding a stream of loose hay into a collapsible container having a pair of sections of substantially identical sizes and configurations, including a hollow, open top body provided with a bed, and a normally elevated open bottom press having a crowned roof, each being additionally provided with opposed, upright side and end walls, the press being restricted to vertical, rectilinear reciprocation and being an upper extension of the body, aligned and in registered communication with the latter, when the press is elevated; placing as much of said hay into the container as can be held or practically contained by continuing said hay feeding step while the press is elevated until both the body and the press are filled with a loose mass of said hay; thereupon preforming said mass into the shape of a polygonal haystack by lowering the press into the body with a steady, continuous force sufficient to slip the press between the body and said mass to dispose the press over and around the mass, enclosing the latter within the press, surrounded by the side and end walls of the press, and confined between

said roof and said bed; and condensing said preformed mass into a compact stack of substantially uniform density throughout, molded to the internal configuration of the press, by continuing said steady press lowering force without interruption to inwardly compress the preformed mass simultaneously end to end thereof, laterally thereof and from top to bottom thereof prior to raising the press to its normally elevated position.

CLAIM 3. The method as claimed in claim 1; and the additional step of deflecting said hay stream up and down in the container while carrying out said feeding step to evenly distribute the hay end to end of the container.

CLAIM 4. The method of making a stack of hay which comprises the steps of: feeding a stream of loose hay into a collapsible container having a pair of sections of substantially identical sizes and configurations, including a hollow, open top body provided with a bed, and a normally elevated, open bottom press having a crowned roof, each being additionally provided with opposed, upright side and end walls, the press being restricted to vertical, rectilinear reciprocation and being an upper extension of the body, aligned and in registered communication with the latter, when the press is elevated, said feeding comprising the step of: blowing the hay into the press end to end of the latter above said body along the lower surface of said roof with a blast of air currents; exhausting the press of said air currents through the roof as the hay gravitates in the container toward said bed; placing as much of said hay into the container as can be held or practically contained by continuing said hay blowing and air exhausting steps while the press is elevated until both the body and the press are filled with a loose mass of said hay; thereupon preforming said mass into the shape

of a polygonal haystack by lowering the press into the body with a steady, continuous force sufficient to slip the press between the body and said mass to dispose the press over and around the mass, enclosing the latter within the press, surrounded by the side and end walls of the press, and confined between said roof and said bed; and condensing said preformed mass into a compact stack of substantially uniform density throughout, molded to the internal configuration of the press, by continuing said steady press lowering force without interruption to inwardly compress the preformed mass simultaneously end to end thereof, laterally thereof and from top to bottom thereof prior to raising the press to its normally elevated position.

CLAIM 7. The method as claimed in claim 4; and the additional step of deflecting said hay-laden air currents up and down to evenly distribute the gravitating hay end to end of the container.

3,878,670 (Adee)

CLAIM 9. In a stack forming implement: a mobile container defining a chamber for receiving crop to be formed into a stack; pickup and delivery means disposed adjacent said container and operable to direct a stream of projected crop into said chamber; mechanism for periodically compacting crop collecting in the chamber and including a compressor reciprocable vertically on the container; a shiftable deflector mounted for movement into and out of a position for deflecting the projected crop toward one part of the chamber; and structure coupled with said deflector and operable in response to actuation of said mechanism to effect said movement of the deflector when the compressor is disposed at a sufficient height to receive the crop stream therebeneath.

CLAIM 10. In a stack forming implement as claimed in claim 9, wherein said structure is inoperable to cause said movement of the deflector when the compressor is below said height.

CLAIM 11. In a stack forming implement as claimed in claim 10, wherein said deflector is provided with limit means for precluding further movement of the deflector beyond said crop deflecting position thereof when the compressor is below said height.

CLAIM 12. In a stack forming implement as claimed in claim 11, wherein said structure includes a cable connected to said deflector for lowering of the deflector into said position as the compressor is lowered, said limit means being disposed to relieve the load of the deflector from said cable when the compressor is below said height.

3,899,966 (White)

CLAIM 5. A stacker including: a container adapted to receive a crop to be stacked and provided with a shiftable endgate; compressor apparatus including vertically reciprocable press structure carried by the container for forming the crop in the container into a compact stack, said apparatus being selectively operable to control opening of the endgate as the structure is moved toward one end of its path of travel; a releaseable lock for retaining the endgate in a closed position; and mechanism for rendering said apparatus operable to release said lock prior to opening of the endgate as said structure is moved.

CLAIM 6. A stacker as claimed in claim 5, said mechanism including a member shiftable into said path of travel of said structure and engagable by the latter as it is moved toward said one end of its path of travel for selectively releasing the lock.

CLAIM 7. A stacker as claimed in claim 6, said lock including a latch pivotally mounted on the endgate, there being a pin secured to said container, said latch being engagable with the pin.

3,757,687 (Brooks, et al.)

CLAIM 4. In a stack forming implement: crop receiving structure including a hollow open top body having a pair of spaced, upright sides and a hollow open bottom press, reciprocable vertically in said body, said press being provided with a roof and with a pair of spaced, upright sides; and a pair of identical motion transmitting mechanisms one for each side respectively of the body exteriorly of the latter, each mechanism including: a pair of upright arms; shafts mounting said arms on the proximal side of said body for swinging movement within a common upright plane about horizontally spaced axes, means restraining the arms to swinging movement in unison, a pair of elongated links projecting above said sides of the body and disposed in a common upright plane, each link extending upwardly from a corresponding arm, horizontally spaced pivot pins remote from said shafts coupling the links at the lower ends thereof with their arms, horizontally spaced pivot pins at the upper ends of the links below the top of said roof coupling the same with the press for raising and lowering the latter in response to swinging of the arms, the shafts and the pins being normal to the path of reciprocation of the press, and power means for swinging the arms.

CLAIM 5. The invention of Claim 4, each power means comprising a fluid pressure piston and cylinder assembly.

CLAIM 6. The invention of claim 5, each assembly pivotally interconnecting the body and one of said arms.

CLAIM 7. The invention of Claim 4, each arm having a first upper end and a second end spaced from said first end, the shafts being adjacent said first ends, said links being coupled with the arms adjacent said second ends.

CLAIM 8. The invention of Claim 4, each arm having an end spaced from its shaft, said restraining means being between said ends of the arms.

CLAIM 10. The invention of Claim 4; and means for synchronizing said mechanisms.

3,842,732 (Anderson)

CLAIM 1. A stacker including: a container adapted to receive a crop to be stacked; apparatus including a reciprocable compressor associated with the container for periodically compacting the crop into a stack conforming substantially in size and shape with the container, said container having an open end through which the stack passes during unloading; a gate movable on said container into and out of closing relationship to said end; means releasably holding the gate in said closing relationship; and structure operably coupling said gate with said apparatus and shiftable during each acutation of the latter, said structure controlling movement of the gate only when said holding means is released.

CLAIM 2. A stacker as claimed in Claim 1, wherein said structure pulls on said gate during said movement of the latter.

CLAIM 5. A stacker as claimed in Claim 1, wherein said gate is provided with means automatically initiated movement of the gate out of said closing relationship when said holding means is released.

CLAIM 7. A stacker as claimed in Claim 1, wherein said apparatus includes drive mechanism for said compressor, said structure being connected at one end to said mechanism and at the opposite end to said gate.

CLAIM 10. A stacker including: a container adapted to receive a crop to be stacked; a reciprocable compressor associated with the container for periodically compacting the crop into a stack conforming substantially in size and shape with the container, said container having an open end through which the stack passes during unloading; mechanism for actuating the compressor; a gate movable on said container into and out of closing relationship to said end; means releasably holding the gate in said closing relationship; and structure linking said mechanism with the gate for controlling said movement of the gate when said holding means is released.

MANUAL OF PATENT EXAMINING PROCEDURE

706 Rejection of Claims

Although this part of the Manual explains the procedure in *rejecting* claims, the examiner should never overlook the importance of his role in *allowing* claims which properly define the invention.

37 CFR 1.106. *Rejection of claims.* (a) If the invention is not considered patentable, or not considered patentable as claimed, the claims, or those considered unpatentable will be rejected.

(b) In rejecting claims for want of novelty or for obviousness, the examiner must cite the best references at his command. When a reference is complex or shows

or describes inventions other than that claimed by the applicant, the particular part relied on must be designated as nearly as practicable. The pertinence of each reference, if not apparent, must be clearly explained and each rejected claim specified.

Patent examiners carry the responsibility of making sure that the standard of patentability enunciated by the Supreme Court and by the Congress is applied in *each and every case*. The Supreme Court in *Graham v. John Deere*, 148 USPQ 459 (decided February 21, 1966), stated that,

"Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may have relevancy....

"This is not to say, however, that there will not be difficulties in applying the nonobviousness test. What is obvious is not a question upon which there is likely to be uniformity of thought in every given factual context. The difficulties, however, are comparable to those encountered daily by the courts in such frames of reference as negligence and scienter, and should be amenable to a case-by-case development. We believe that strict observance of the requirements laid down here will result in that uniformity and

definitiveness which Congress called for in the 1952 Act.

"While we have focused attention on the appropriate standard to be applied by the courts, it must be remembered that the primary responsibility for sifting out unpatentable material lies in the Patent Office. To await litigation is—for all practical purposes—to debilitate the patent system. We have observed a notorious difference between the standards applied by the Patent Office and by the courts. While many reasons can be adduced to explain the discrepancy, one may well be the free rein often exercised by examiners in their use of the concept of "invention." In this connection we note that the Patent Office is confronted with a most difficult task. . . . This is itself a compelling reason for the Commissioner to strictly adhere to the 1952 Act as interpreted here. This would, we believe, not only expedite disposition but bring about a closer concurrence between administrative and judicial precedent."

Accordingly, an application covering an invention of doubtful patentability should not be allowed, unless and until issues pertinent to such doubt have been raised and overcome in the course of examination and prosecution, since otherwise the resultant patent would not justify the statutory presumption of validity (35 U.S.C. 282), nor would it "strictly adhere" to the requirements laid down by Congress in the 1952 Act as interpreted by the Supreme Court.

Office policy has consistently been to follow *Graham v. John Deere Co.* in the consideration and determination of obviousness under 35 U.S.C. 103. As quoted above,

the three factual inquiries enunciated therein as a background for determining obviousness are briefly as follows:

1. Determination of the steps and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims in issue; and
3. Resolving the level of ordinary skill in the pertinent art.

The Supreme Court reaffirmed and relied upon the Graham three pronged test in its consideration and determination of obviousness in the fact situations presented in both the *Sakraida v. Ag Pro*, 189 USPQ 449 (decided April 20, 1976) and *Anderson's-Black Rock, Inc. v. Pavement Salvage Co.*, 163 USPQ 673 (decided December 8, 1969) decisions. In each case, the Court went on to discuss whether the claimed combinations produced a "new or different function" and a "synergistic result", but clearly decided whether the claimed inventions were unobvious on the basis of the three-way test in Graham. Nowhere in its decision in those cases does the Court state that the "new or different function" and "synergistic result" tests supersede a finding of unobviousness or obviousness under the Graham test.

Accordingly, examiners should apply the test for patentability under 35 U.S.C. 103 set forth in Graham. It should be noted that the Supreme Court's application of the Graham test to the fact circumstances in *Ag Pro* was somewhat stringent, as it was in *Black Rock*.

The standards of patentability applied in the examination of claims must be the same throughout the Office. In every art, whether it be considered "complex," "newly

developed," "crowded," or "competitive," all of the requirements for patentability (e.g., novelty, usefulness and unobviousness, as provided in 35 U.S.C. 101, 102, and 103) must be met before a claim is allowed. The mere fact that a claim recites in detail all of the features of an invention (i.e., is a "picture" claim) is never, in itself, justification for the allowance of such a claim.

When an application discloses patentable subject matter and it is apparent from the claims and the applicant's arguments that the claims are intended to be directed to such patentable subject matter, but the claims in their present form cannot be allowed because of defects in form or omission of a limitation, the examiner should not stop with a bare objection or rejection of the claims. The examiner's action should be constructive in nature and when possible he should offer a definite suggestion for correction.

If the examiner is satisfied after the search has been completed that patentable subject matter has been disclosed and the record indicates that the applicant intends to claim such subject matter, he may note in the Office action that certain aspects or features of the patentable invention have not been claimed and that if properly claimed such claims may be given favorable consideration.

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

No. 77-1718
No. 77-2638

ARTHUR M. HERSCHEINSOHN and CORONA HAIR
NET CORPORATION,
Plaintiffs-Appellees

v.

ROBERT M. HOFFMAN, individually; ROBERT M. HOFFMAN, dba IMAGE PRODUCTS CO. and ADVANCED DESIGN LABORATORIES; HOFFMAN BEAUTY AND BARBER SUPPLY CO.; HOFFMAN BEAUTY AND BARBER SUPPLY CO., dba IMAGE PRODUCTS CO. and ADVANCED DESIGN LABORATORIES,
Defendants-Appellants.

Appeal From the United States District Court for the
Central District of California

OPINION

(Filed March 26, 1979)

Before: CARTER and WRIGHT, Circuit Judges, and CRAIG, District Judge.*

CARTER, Circuit Judge:

This is an action for infringement of Patent No. 3,253,292 (hereafter No. 292), wherein the district court

*Hon. Walter E. Craig, Chief U.S. District Judge, District of Arizona, sitting by designation.

entered a Judgment that the patent was valid and infringed and awarded damages. This is Appeal No. 77-1718.

Thereafter, a Judgment was entered holding defendants in contempt for offering to sell their devices during the period between the receipts of a Memorandum of Decision and the entry of Judgment for the plaintiffs. The appeal in this proceeding is No. 77-2638. We reverse both Judgments.

Facts

On May 15, 1964, Herschensohn, one of the plaintiffs herein, filed an application for letters-patent. The patent, No. 292, was issued on March 31, 1966.

Prior to 1971, plaintiffs sold a brush made from a flexible copolymer plastic with tufts of bristles, including 7 or 8 slender strands folded to form 14 to 16 bristles. Exhibit 3, in evidence, is an example of this brush. In 1971, the design was changed by the plaintiffs so that each tuft was formed from a single heavier monofilament folded to form two bristles, one longer than the other.

In 1974, the handle, spine and fingers were made from a plastic material which was less flexible than the original copolymer plastic material. Exhibit 2, in evidence, is an example of this second brush.

Defendants admittedly copied the latter brush, Exhibit 2, by having an organization in Hong Kong make the brushes and import them to the United States. They were literally "Chinese copies" of plaintiffs' second brush, Exhibit 2. Exhibit 5, in evidence, is an example of the defendants' alleged offending brush.

Patent No. 292 has four claims, of which #1, #3 and #4 are alleged to be infringed. Claim #1 is the only independent claim. Claims #3 and #4 are merely minor variations of Claim #1.

Claim #1 reads as follows:

1. In a hair brush of the character described, a handle, a brush back comprising a flexible spine element extending as a cantilever from said handle, a first series of closely spaced fingers extending laterally from one side and a second series of closely spaced fingers extending laterally from the opposite side of said spine element and tufts of relatively stiff bristles extending downwardly from at least the fingers of said brush back whereby when the brush is pulled through hair through which a comb can pass, said spine will bend so that the distal ends of the fingers on the trailing side of the brush will approach each other.

The appeals raise three questions:

1. The validity of the patent claims, #1, #3 and #4.
2. Whether the patent claims were infringed.
3. Was there a valid injunction in the Memorandum of Decision which can sustain the Contempt Judgment.

Validity

The patent sets forth a combination of old elements, four in number: a handle, a flexible spine, laterally extended fingers, and tufts of relatively stiff bristles. All of these elements are old in the art and no discussion of this art is necessary. The patent, therefore, is a combination patent and is controlled by the Supreme Court decisions on such patents. One of the latest such cases is *Sakraida v. Ag Pro, Inc.*, 425 U.S. 273 (1976). There a unanimous Court reviewed the earlier cases and reversed the Fifth Circuit decision which had held the patent valid.

Congress in 1952 enacted 35 U.S.C. § 103, "as a codification of judicial precedents . . . with congressional directions that inquiries into the obviousness of the subject matter sought to be patented are a prerequisite to patentability." *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966).

Section 103 provides:

"A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made."

In *Sakraida, supra*, the Court said (at 280):

"The ultimate test of patent validity is one of law, *Great A. & P. Tea Co. v. Supermarket Corp.*, 340 U.S. 147, 155 (1950), but resolution of the obviousness issue necessarily entails several basic factual inquiries, *Graham v. John Deere Co.*, *supra*, at 17.

'Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved.' *Ibid.*"

* * *

"Indeed, respondent admitted at trial 'that the patent is made up of a combination of old elements' and 'that all elements are individually old' Accordingly, the District Court properly followed our admonition in

Great A. & P. Tea Co. v. Supermarket Corp., *supra*, at 152: 'Courts should scrutinize combination patent claims with a care proportioned to the difficulty and improbability of finding invention in an assembly of old elements. . . . A patent for a combination which only unites old elements with no change in their respective functions . . . obviously withdraws what already is known into the field of its monopoly and diminishes the resources available to skillful men. . . .' *Sakraida, supra*, pp. 280-1.

"We cannot agree [with the appeals court below] that the combination of these old elements . . . can properly be characterized as synergistic, that is, 'result[ing] in an effect greater than the sum of the several effects taken separately.' *Anderson's-Black Rock v. Pavement Co.*, 396 U.S. 57, 61 (1969). Rather, this patent simply arranges old elements with each performing the same function it had been known to perform, although perhaps producing a more striking result than in previous combinations. Such combinations are not patentable under standards appropriate for a combination patent. *Great A. & P. Tea Co. v. Supermarket Corp.*, *supra*; *Anderson's-Black Rock v. Pavement Co.*, *supra*. Under those authorities this assembly of old elements . . . falls under the head of 'the work of the skilful mechanic, not that of the inventor.' *Hotchkiss v. Greenwood*, 11 How., at 267. . . .

" . . . [D]esirable benefits 'without invention will not make patentability.' *Great A. & P. Tea Co. v. Supermarket Corp.*, 340 U.S. at 153. . . ." *Sakraida, supra*, pp. 282-3.

Counsel for the plaintiffs apparently never understood fully the requirement that a patent based on a combination of elements old in the art must produce a new and

unusual result. Counsel stated: "These defendants have asserted that these cases require a patent to have a synergistic result. . . . In their trial brief they said they had to make 2 plus 2 equal 5, which was the expression they used. This appears to be an assertion of one of two things: either 1, an assertion that the Supreme Court has overruled the patent system, or, 2, a requirement that you have to violate or at least disprove a known law of nature before you can have a valid patent. Because obviously 2 plus 2 never equal 5[sic]. . . ." Plaintiffs failed to identify a synergistic result.

The trial court, in Finding of Fact #22, stated:

"22. The brush of the '292 patent does produce an unusual or surprising result which would not be expected by the man having ordinary skill in the art. The flexibility of the brush's spine element, when coupled with the plurality of bristle carrying fingers extending laterally on each side of the flexible spine, with the vents between the finger members, allows the brush to be pulled through the hair with remarkable ease. This is an unusual or surprising consequence from the unification of the elements concerned. It is an unusual or surprising result. It is not merely the sum of the results of the individual elements of the brush but is instead an effect greater than the sum of the effects of the several elements of the brush taken separately."

The trial court's Memorandum of Decision was similar.

We conclude that Claims #1, #3, and #4 of the patent are invalid. Claim #1 recited that the bending of the distal ends of the fingers on the trailing side of the brush "would approach each other." The patent lists various purposes:

- (1) Mechanical action to penetrate thick tresses, dig into the scalp and cause drag on the hair and scalp to accomplish the effects of massage.
- (2) To agitate the root of the hair and its associated muscle tissue and bring additional sebum to the hair and increase the luster of the hair.
- (3) To automatically pinch and tug the hair and thus exercise the hair roots and their environments.
- (4) To provide a hair brush which is easily cleanable, simple in construction, reasonable in cost, and efficient in carrying out the purposes for which it was designed.

(5) Finally, since the tips of the fingers in the patent all come towards each other, causing the bristle tufts to pinch the hair between them, the bristles are generally of stiff material. The attendant movement of the brush will cause the pinched hair to be tugged, dragged on and pulled.

None of these listed "purposes" of the patent produce a "new or different function" (*Anderson's-Black Rock v. Pavement Co.*, 396 U.S. 57 at 60 (1969)) from that produced by the old elements in the combination.

The result claimed by plaintiffs as synergistic, "pulling the brush through the hair with remarkable ease" (Memorandum of Decision) is contrary to the teachings of the patent. The use of two bristles in each tuft, as shown in Exhibit 2, may assist in allowing the brush to be pulled through the hair with ease. The use of such a bristle to accomplish ease of pulling through the hair would be obvious.

Certainly, the two results referred to by the court in its Memorandum of Decision—(1) allowing the brush to be pulled through the hair with remarkable ease, and

(2) the vents allowing the hair to be easily blown dry—
are not new or unusual results.

It is obvious from the above that the patent is not valid, having no new, unusual or synergistic result,¹ and having no beneficial use other than uses already old in the art of brushes and combs. We also hold Claims #1, #3 and #4 of the patent are invalid for obviousness.

Infringement

We have examined closely Exhibits 2, 3 and 5. Exhibit 5 is the offending device and a copy of Exhibit 2. Exhibit 3 was the brush made and sold by plaintiffs prior to 1971. The parties stipulated that Exhibit 3 was within the scope and claims of Patent No. 292.

Claim #1 of the patent was limited to a brush "comprising a flexible spine element extending from the handle." It provided: "Said spine will bend so that the distal ends of the fingers on the trailing side of the brush will approach each other." The claim also was limited to "tufts of stiff bristles."

None of these elements are found in the accused structure, Exhibit 5. Examination shows the spine will not bend so as to be flexible enough to bend while the brush is run through the hair. The brush will not function as described in the patent, i.e., the fingers will not "come towards each other, causing the bristle tufts to pinch the hair between them . . ." (Patent p. 1, column

1. Late cases in the Ninth Circuit are in accord with our holding. A combination patent (i.e., an accumulation of old devices) is valid "only when the whole in some way exceeds the sum of its parts . . ." *Astro Music, Inc. v. Eastham*, 564 F.2d 1236, 1238 (9 Cir. 1977).

Austin v. Marco Dental Products, Inc., 560 F.2d 966 (9 Cir. 1977) also involved a combination patent and is in accord with our holding herein.

2, lines 56-63), nor, as described in Claim #1, will "said spine . . . bend so that the distal ends of the fingers on the trailing side of the brush . . . approach each other." (Patent, p. 2, column 2, lines 4-6.)

The plaintiff-inventor testified that the term "flexible" requires sufficient bending to bring the bristles together to grab or clamp the hair between tufts instead of merely floating through the hair. Examination shows that Exhibit 2 or Exhibit 5 cannot cause the above actions.

The trial court, although requested to find as a fact that the spine of the accused device, Exhibit 5, was flexible (R. 213), refused to do so, apparently convinced that the spine was not flexible. Likewise, the court, although requested to find that the mode of operation of Exhibit 5 was as set forth in the patent at Column 2, lines 56-63, refused to do so, apparently convinced that it did not.

Plaintiffs' expert, Mr. Walsh, in describing the operation of plaintiffs' brush, Exhibit 2 (copied by defendants as Exhibit 5) testified that Exhibit 2 was not flexible in the sense used in the patent and that the brush creates no drag or pull.

Also missing from the accused brush, Exhibit 5, are "tufts of relatively stiff bristles." The court refused a request for a finding that the single filament of Exhibit 5 constitutes tufts of relatively stiff material, apparently convinced to the contrary. The substitutions of one filament making two bristles insured the floating movement of the brush, but the elimination of any pulling or grabbing of the hair.

In our case we have an accused device, the brush, Exhibit 5 (a copy of the plaintiffs' brush, Exhibit 2), which does not have the structure or the function described in the patent. It (1) does not have a flexible

spine but a spine which will not bend on use; (2) does not have tufts of bristles, but one single monofilament folded to form two bristles; (3) which, by the trial court's Memorandum of Decision and Finding of Fact #22, has a purpose ("to be pulled through the hair with remarkable ease"), a purpose not listed in the patent and entirely different from the listed objects of the alleged invention; (4) which has no new or unusual or synergistic result; and (5) in toto, a device or brush having a different structure and a different mode of operation and effect than that described in the patent.

It is clear that Exhibit 2, the plaintiffs' device which defendants admittedly copied, and Exhibit 3, the device made by plaintiffs prior to 1971, are different brushes in structure and operation. We have held that the patent claims, #1, #3, and #4, are not valid. But even if valid, it was *not* Exhibit 3 which was copied but Exhibit 2. Exhibit 2 does not infringe the patent.

The Contempt Judgment

The trial court's Memorandum of Decision was entered on January 20, 1977. On February 28, 1977, the final Judgment was entered. The plaintiffs moved to hold defendants in contempt of court for allegedly violating an injunction against infringement which plaintiffs claim was included within the Memorandum of Decision. After a hearing, Findings of Fact, Conclusions of Law, and Judgment of Contempt were entered on April 4, 1977, against defendants. Defendants have appealed the Contempt Judgment in Appeal No. 77-2638.

The general rule is that an unpatented object may be copied and sold. *Sears, Roebuck & Co. v. Stiffel Company*, 376 U.S. 225 (1964) and *Compco. Corp. v. Day-Brite Lighting, Inc.*, 376 U.S. 234 (1964).

Since we have held the patent invalid, the sole question presented on Appeal No. 77-2638 is whether, after January 20, 1977, there was in effect a valid injunction against infringement by defendants of the plaintiffs' alleged patent.

The Memorandum of Decision ended with an order:

"It is therefore Ordered that judgment be entered for plaintiffs in the amount specified above and that the defendants be permanently enjoined from further infringing plaintiffs' patent. Counsel for plaintiffs is directed to prepare proposed findings of fact, conclusions of law and judgment pursuant to local Rule 7. (Judgment shall be set forth as a separate document as required by Rule 58, F.R. Civ.P.)

Dated January 17, 1977

Laughlin E. Waters

United States District Judge"

(Emphasis added)

There are various reasons which demonstrate plaintiffs are in error in their contention that the Memorandum and Order constitute an injunction.

(1) The Memorandum and Order speak of the future. It does not state that defendants *are* enjoined, but, instead, "be" permanently enjoined. We read the language as a direction—the defendants *[will]* be enjoined, after the proposed Findings and Judgment are prepared by plaintiffs' attorney and signed by the court. The Final Judgment, dated February 28, 1977, stated that the defendants and their agents "are forever enjoined and restrained."

(2) Rule 58, F.R.Civ.P. requires—

"every judgment shall be set forth on a separate judgment. A judgment is effective only when so set forth, and when entered as provided in Rule 79(a)."

A recent Supreme Court case, *Bankers Trust Co. v. Mallis*, 435 U.S. 351 (1978), decided after the Contempt Judgment, may have pulled some of the teeth in Rule 58, *supra*, by providing that in certain cases the rule may be waived by the parties. Regardless of the effect or retroactivity, if any, of that case, Rule 58 must be viewed as having a bearing on the intent of the court and the parties as to whether an injunction was intended. The Memorandum directed counsel for the plaintiffs to prepare findings of fact and conclusions of law and judgment pursuant to local Rule 7 and Rule 58, F.R.Civ.P. Local Rule 7 of the Central District of California requires findings of fact and conclusions of law and implements Rule 58, F.R.Civ.P.

(3) Plaintiffs argue that there was an injunction *pendente lite* in the Order. However, the Order speaks of *preparation* of a permanent injunction.

(4) Rule 65(c), F.R.Civ.P. requires security or a bond, unless the court directs otherwise, and findings of fact to support the injunction.

(5) Rule 65(d), F.R.Civ.P. requires that an injunction "... shall describe in reasonable detail, and not by reference to the complaint or other documents, the act or acts to be restrained. . ." The Memorandum of Decision signed by the court did not comply with Rule 65(c) or (d).

(6) Plaintiffs cite no authority that the Memorandum of Decision can be an injunction, and defendants could find none.

It is true that an injunction must be obeyed while objections and questions are presented on appeal. But plaintiffs assume that an injunction was issued. We find that no injunction was issued, but only direction for the

entry of a permanent injunction against infringement. The rule of law above does not apply.

The judgments are reversed and the case remanded to the district court for entry of a judgment on non-validity and non-infringement.

UNITED STATES COURT OF APPEALS
FOR THE EIGHTH CIRCUIT

No. 78-1341

No. 78-1301

Reinke Manufacturing Company, Inc.,
Appellant-Cross-Appellee,

v.

Sidney Manufacturing Corporation,
Appellee-Cross-Appellant.

Appeal from the United States District Court
for the District of Nebraska

Submitted: November 15, 1978

Filed: February 26, 1979

Before STEPHENSON, HENLEY and McMILLIAN, Circuit
Judges.

STEPHENSON, Circuit Judge.

This case involves two patents, No. 3608826 ('826) and No. 3750953 ('953), on a circular irrigation system known as the Electrogator. Plaintiff-appellant Reinke

Manufacturing Company, the assignee of the patents, primarily appeals from the trial court's¹ determination that the patents are invalid for reasons of obviousness. Defendant-appellee Sidney Manufacturing Corporation, the alleged infringer of the patents, primarily cross-appeals from the trial court's determination that, if the patents are valid, Sidney infringed the claims of the patents in question.²

Because we affirm the district court's finding that the patents are invalid for reasons of obviousness under 35 U.S.C. § 103,³ it is not necessary to consider the issue of infringement. There can be no infringement of an invalid patent. *Greening Nursery Co. v. J & R Tool & Mfg. Co.*, 376 F.2d 738, 742 (8th Cir. 1967).

The Supreme Court set out the section 103 standard in *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966):

While the ultimate question of patent validity is one of law, * * * the § 103 condition, which is but one of three conditions, each of which must be satisfied,⁴ lends itself to several basic factual inquiries. Under § 103, the scope and content of the prior art

1. The Honorable Robert F. Denney, United States District Judge for the District of Nebraska.

2. Sidney also raises several other issues, but in light of our holding, a discussion of those is not necessary.

3. 35 U.S.C. § 103 provides:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. In addition to being nonobvious, an invention must also be useful and novel in order to be patentable. 35 U.S.C. §§ 102, 103; *Clark Equip. Co. v. Keller*, 570 F.2d 778, 785 (8th Cir. 1978), cert. denied, 437 U.S.L.W. 3222 (Oct. 3, 1978, No. 77-1640).

are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may have relevancy. * * *

This is not to say, however, that there will not be difficulties in applying the nonobviousness test. What is obvious is not a question upon which there is likely to be uniformity of thought in every given factual context. The difficulties, however, are comparable to those encountered daily by the courts in such frames of reference as negligence and scienter, and should be amenable to a case-by-case development. We believe that strict observance of the requirements laid down here will result in that uniformity and definiteness which Congress called for in the 1952 Act.

While a presumption of validity is accorded to patents that have "survived the scrutiny of the Patent Office," *Woodstream Corp. v. Herter's, Inc.*, 446 F.2d 1143, 1149 (8th Cir. 1971), and while the primary responsibility for initially making determinations inherent in approving patents lies with the Patent Office, the reviewing court has the responsibility of applying the strict and invariable standard of section 103 as mandated by the Supreme Court in *Graham v. John Deere Co.*, *supra*, 383 U.S. at 17-19.

In applying section 103, it is important to keep in mind that the test is not whether the object is an improvement in the art; it is not whether the object works better; "an

improvement which is obvious to those skilled in the art is not entitled to protection." *Airlite Plastics Co. v. Plasti-lite Corp.*, 526 F.2d 1078, 1082 (8th Cir. 1975), cert. denied, 425 U.S. 938 (1976).

The district court's factual discussion of the Reinke patents provides an excellent understanding of the subject matter:

The subject of the Reinke patents is an electrically driven circular irrigation system in which the water pipe carrying sprinkler heads serves as part of a traveling sectional boom. One end of the boom is connected to a stand assembly positioned in the center of a square area to be irrigated. The boom moves in a circular path around the stand assembly. Such machines are generally known as center pivot irrigation systems, because the boom carrying the sprinkler heads travels around the central stand or pivot location containing the water supply pipe.

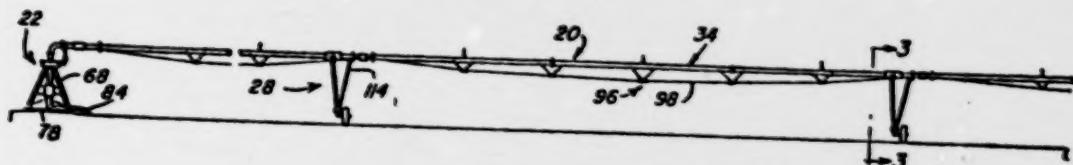
In the Reinke patents, the boom is propelled in a circular path by electrically driven wheeled towers, i.e., "drive units," spaced at intervals. The wheel assemblies also provide support so that the boom is maintained in a straight line as it rotates. The boom itself consists of the water pipe and a supporting truss assembly underneath and interconnected with the water pipe.

Generally, the truss is constructed as follows[:] *** The water pipe forms the top chord of the truss, and the bottom or tension chord is formed by cables or tie rods. On either side of the water pipe, brace chords in the shape of a "V," attached to the pipe at the upper ends of the V, extend downward with the apex of each V connected to a bottom or tension chord.

The V braces form the web members of the truss. A transversely extending brace, or connector bar, is attached to the apices of the V's at the points where the apices are fixed to the bottom or tension chords.

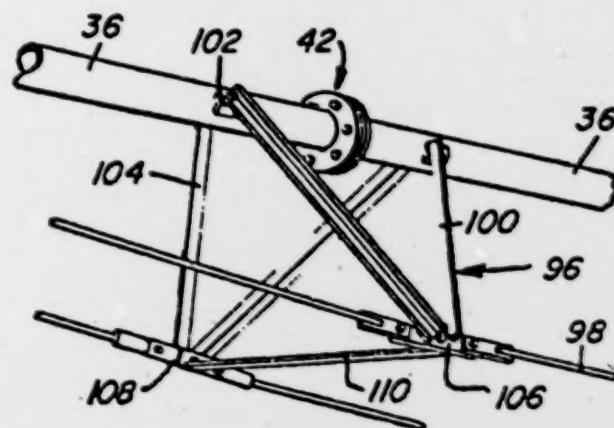
Reinke Mfg. Co. v. Sidney Mfg. Corp., 446 F. Supp. 1056, 1060 (D. Neb. 1978).

Fig. 2a of Patent '826



Side Sketch of Electrogator

Fig. 14 of Patent '826



Close-up Sketch of Truss Section of Electrogator

The dispute in this case centers around claims 4 and 11 of the '826 patent, and claims 1, 3, 4 and 5 of the '953 patent,⁵ which primarily describe the truss which supports the water pipe and the attaching devices used in conjunction with the truss.

5. The claims provide in pertinent part:

The '826 patent:

4. An irrigation apparatus comprising an elongated pipe [.] * * * said elongated pipe including a truss structure disposed along the undersurface thereof between the wheeled means, said structure including a plurality of pairs of V-shaped braces having the upper ends connected to the pipe in longitudinally spaced relation with the braces in each pair depending downwardly in converging relation to each other and in diverging relation to the braces in an opposed pair, means interconnecting the apices of the pairs of braces to retain them rigidly in spaced-apart relation, and tension rods connected longitudinally of the apices of the braces along each side of the pipe with the ends thereof being connected to the pipe at the end of each section thereof thereby rigidifying and supporting the pipe.

11. * * * that improvement comprising a supporting truss structure for the pipe including a plurality of longitudinally spaced brace assemblies fixed to said pipe and depending therefrom, each brace assembly including a pair of opposed brace members of V-shaped configuration having the upper ends thereof attached to the pipe and depending in diverging relation, means retaining the lower apices of opposed pairs of brace members in spaced relation, and tension members connected to the apices of said brace members and extending and attached to the pipe at remote points for rigidifying the pipe and forming a truss support therefor.

The '953 patent:

1. * * * that improvement comprising a supporting truss structure for the pipe including a plurality of longitudinally spaced brace assemblies fixed to said pipe and depending therefrom, each brace assembly including a pair of opposed brace members of V-shaped configuration having the upper ends thereof attached to the pipe and depending in diverging relation, means retaining the lower apices of opposed pairs of brace members in spaced relation, and tension members connected to the apices of the brace members and extending and attached to the pipe at remote points for rigidifying the pipe and forming a truss support therefor, said pipe being sectional with the sections being joined by abutting end flanges, said tension members being attached to the pipe by extending through and being secured to a pair of abutting flanges.

(Continued on following page)

The district court stated the issue as follows:

Center pivot irrigation equipment is subject to a variety of loads and stresses, such as the weight of its own structure, natural forces such as wind, stresses arising from the dynamics of travel over rough terrain, uneven loads as water passes through the pipe. All such machines, therefore, must include features to maintain the pipe in alignment and avoid breakage or collapse of the pipe spans and drive units.

Footnote continued—

3. * * * that improvement comprising a supporting truss structure for the pipe including a plurality of longitudinally spaced brace assemblies fixed to said pipe and depending therefrom, each brace assembly including a pair of opposed brace members of V-shaped configuration having the upper ends thereof attached to the pipe and depending in diverging relation, means retaining the lower apices of opposed pairs of brace members in spaced relation, and tension members connected to the apices of the brace members and extending and attached to the pipe at remote points for rigidifying the pipe and forming a truss support therefor, the upper ends of the brace members being secured to angular clips rigidly affixed to the exterior surface of the pipe.

4. * * * a supporting truss structure for the pipe including a plurality of longitudinally spaced brace assemblies fixed to said pipe and depending therefrom, each brace assembly a pair of opposed brace members having the upper ends thereof attached to the pipe and depending in diverging relation, means retaining the lower ends of opposed pairs of brace members in spaced relation, and tension members connected to the lower ends of the brace members and extending and attached to the pipe at remote points for rigidifying the pipe and forming a truss support therefor, the upper ends of the brace members being secured to clips rigidly affixed to the exterior surface of the pipe, said tension members being attached to the pipe by being secured to flanges on the pipe.

5. The structure as defined in claim 4 wherein said pipe is sectional with the sections being joined by abutting end flanges, said tension members extending through and being secured to a pair of abutting end flanges, each of said opposed brace members including two depending members defining a substantially V-shaped configuration having their lower end portions connected with each other and the tension members being connected with the lower end portions of the brace members.

Mr. Reinke asserts * * * that his truss structure prevents or withstands "wallowing" or "whipping" under such stresses by the "manner in which the braces and pipe are arranged and interconnected with each other and the tying rods [which] produces an interaction which rigidifies the assembly." Defendant contends that even if the Reinke V-brace configuration withstands loads and stresses more effectively than truss structures previously used on pivot sprinklers, the Reinke trussed pipe represents an obvious extension of the prior art.

Reinke Mfg. Co. v. Sidney Mfg. Corp., supra, 446 F. Supp. at 1068 (footnote omitted).

As the district court noted, the patents in question are combination patents and "[c]ourts should scrutinize combination patent claims with a care proportioned to the difficulty and improbability of finding invention in an assembly of old elements. . . . A patent for a combination which only unites old elements with no change in their respective functions . . . obviously withdraws what already is known into the field of its monopoly and diminishes the resources available to skillful men" *Sakraida v. Ag Pro, Inc.*, 425 U.S. 273, 281 (1976), quoting from *Great A. & P. Tea Co. v. Supermarket Equip. Corp.*, 340 U.S. 147, 152-53 (1950). Thus, if the claims cover a structure that combines old and well known elements, one of the factors this court must look for in determining whether the patents meet section 103 requirements is synergism: that which results "in an effect greater than the sum of the several effects taken separately." *Anderson's-Black Rock, Inc. v. Pavement Salvage Co.*, 396 U.S. 57, 61 (1969).

In our examination we will not only consider whether it was *obvious* that by putting together the various elements used the result would be the effect achieved in

the Electrogator; we will also consider whether the effect is a new effect, or simply each of the items performing its expected function.

As directed by *Graham*, we shall examine the prior art, the differences between the prior art and the claims in issue, and the level of ordinary skill in the art.

A. Prior Art

Initially we note that principles of truss design are long known to the structural arts of bridge, roof and related designs. A truss is essentially a structure consisting of straight pieces joined to form a series of triangles in a single plane. Continuous triangles may also be built into more than one plane, in which case the truss will have stability in each plane in which triangular support is found.

"Shear" consists of forces acting along a planar surface. If the shear load is more than the material can stand, it will fracture along the plane where the shear load is too great. Under tension, molecules spread or expand. Under compression, they compress. In a truss, members of the triangle resist by tension the tendency of other members to compress, and vice versa.

In general, the truss is based upon the geometric principle that the shape of a triangle cannot be deformed without altering the length of its sides, i.e. the sides of a triangle cannot move with respect to each other. The web members of a truss, the diagonal and vertical elements, assuming adequate connection features, maintain stability between the horizontal upper and lower chords of the truss. Therefore, as the triangle is the most stable planar configuration,

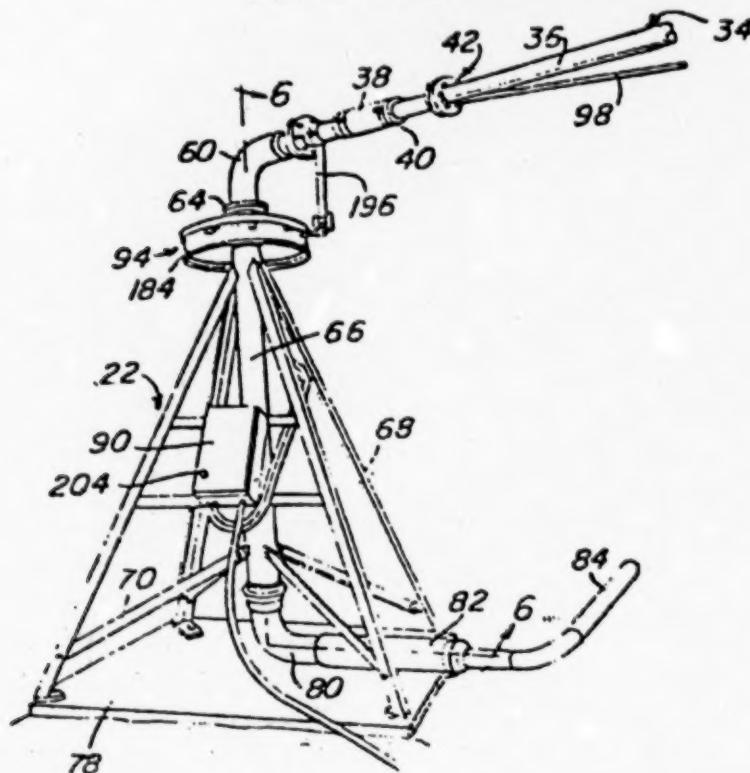
the more planes into which triangulation is introduced, the greater the stability of the structure.⁶

Reinke Mfg. Co. v. Sidney Mfg. Corp., supra, 446 F. Supp. at 1070. Further, the connecting device is described by the claims in dispute, i.e., the angle clips connecting the V-braces to the waterpipe and the method of connecting the ends of the tie rods,⁷ are not new connecting devices

6. There was sufficient evidence to support the conclusion that "trusses" are obvious. There was testimony from two expert witnesses concerning principles of truss construction and there was evidence of the use of truss structures in other similar irrigation systems and in bridge construction.

7. This consisted of extending the ends of the tie rods through holes in the pipe coupling flanges at the end of the boom section.

Fig. 5 of Patent '826

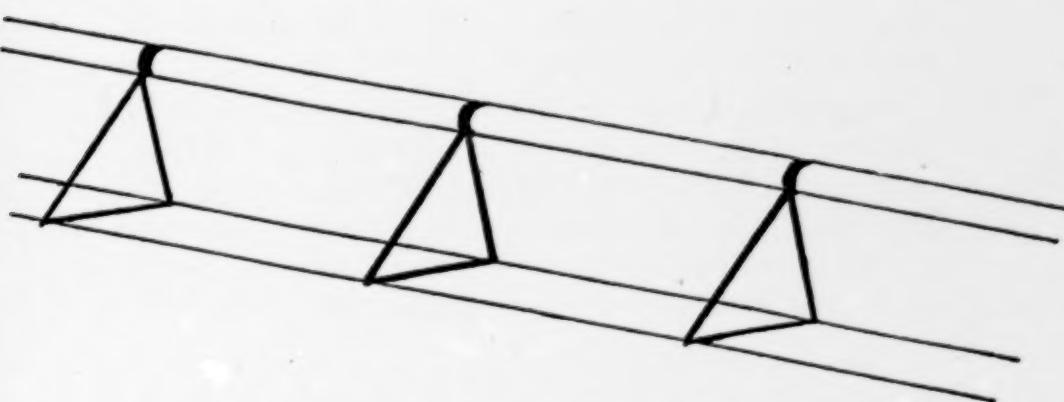


See picture in text, p. 5, Figure 14, No. 102 for an example of the angle clip.

or methods; all were known as part of the art prior to construction of the Electrogator.

Sidney relies upon (1) the "Raincat" system; (2) the "Modified Mel Brown" system; (3) the Wallace U.S. Patent No. 3,335,958; (4) the Allwood Australian Patent No. 227737; and (5) the illustrations in the Swiss Klasse Patent No. 201557 as evidence of prior art pertaining to the mechanical function of the irrigation system.

The Raincat is a pivot irrigation system with the waterpipe supported underneath by a simple truss design of triangular braces in vertical planes transverse to the pipe. The lower corners of the braces are connected by longitudinal tie members extending between the corners and up to the pipe. There is a 90-foot span between the drive units.



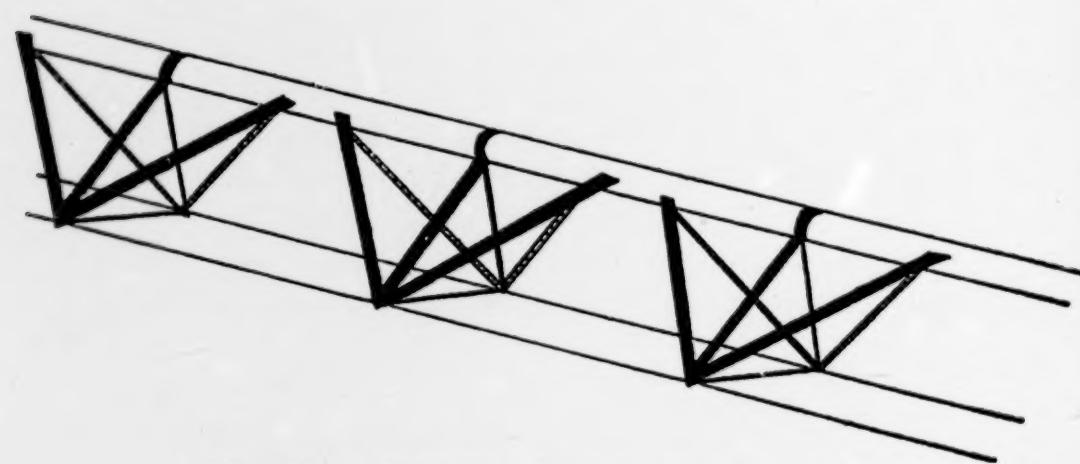
Example of triangular braces

Although the Raincat was built somewhat differently over a period of years, there was testimony that indicated that the arms of the triangles in the truss system were either attached to the waterpipe with clamps that were fastened around the machine or fastened to the flange that hooked together the pipe spans. In subsequent machines, the arms of the braces were welded to lugs.

At the beginning of production of the Raincats, the tie rods were fastened to the pipe with U-bolts.

The Modified Mel Brown—in essence, a modified Raincat—came about as a result of experimentation with the Raincat. Because the U-bolts connecting the tie rods slipped on the original design, the arm of the machine would go into an S-curve and consequently bend the waterpipe.

The first step toward correcting this problem was to put a V-brace at the center triangular brace, in order to keep the waterpipe and the tension rods from going in different directions (causing the S-curve).



Example of V-braces added to triangular braces

The V-brace, depending upon the movement of the pipe and tension rods, will go into either tension or compression.

Later still, the V-braces were eliminated when the U-bolts were changed; the tension rods were instead welded together at a common point onto the pipe, solving the S-curve problem in a different manner.⁸

The Wallace U.S. Patent No. 3335958 and the Allwood Australian Patent No. 227737 are irrigation systems similar

8. One of Reinke's contentions on appeal is that the evidence was insufficient to establish the Modified Mel Brown as prior art. We hold the evidence was sufficient; Mel Brown testified that he had built at least two of the modified structures and that they were shipped out to be used by customers. There was corroborating evidence of a drawing reflecting the modified design, which was initialed by Mel Brown and dated March 26, 1963. The Reinke Patents are dated 1971 and 1973. Although Brown did admit that the structure as built was somewhat different than the drawing, the differences were minor. The primary modification, the added V-brace, was reflected in the drawing and Brown testified that the change was made to the two structures on which he worked.

to the Raincat and the Electrogator. The Swiss Patent No. 201557 discloses the truss structure of what was referred to in testimony as a bridge. It was admitted as evidence by the district court but limited to the illustrations; the text is not translated into English.

Thus the scope and content of the prior art as shown at trial is, at its most refined point, generally included in the Raincat and Modified Mel Brown systems.

B. The Differences Between the Prior Art and the Claims in Issue

Reinke's primary argument is that none of the prior art discloses an arrangement in which the pipe between each pair of drive units is rigidified laterally, vertically, and torsionally by joining it with a plurality of assemblies of opposed braces of V-shape so arranged from one another and interconnected by the tie rods as in the Electrogator.

It is true that the Allwood, Raincat and Modified Mel Brown units all have vertical supports—the Electrogator does not. However, the Modified Mel Brown, in addition to the vertical supports, also has V-shaped braces similar to those on the Electrogator. In addition, truss design in general makes use of triangular braces in different planes in order to provide the support strength for which trusses are used.

Reinke still contends that the effect of its invention was to achieve a self-propelled irrigation system with a span between drive units in excess of 90 feet (120 feet) with the same attributes of strength, alignment and economy as the previously marketed irrigation systems with only 90-foot spans between drive units. Reinke partially attributes this to the connecting devices used in the Electrogator. The connecting devices for the truss support

and the tie rods were different⁹ in the Electrogator from prior art insofar as irrigation systems are concerned. Because Reinke alleges that the combined effect of all of the elements was new—new in that it created an effect heretofore undiscovered which enabled the span distance between drive units to be increased to 120 feet—Reinke contends that this complies with the concept of synergism.

We do not agree that this is synergism.

When the resulting new combination produces a totally new functional aspect, to deny patentability in every case would be to sanction the use of "hindsight" in light of the claimed patent. However, at the same time, to deny patentability where the combination of

9. We note that Mr. Reinke did not attribute a great deal of importance to this at trial:

Q. [Mr. Thomte] I believe, Mr. Reinke, that you testified that the location of the openings in the flanges for the tie rods, were, I think in using your words, located at a very critical or strategic place. Would you elaborate on that, please?

A. [Mr. Reinke] They are located in the flange about one-third from the bottom because that is the most economical way to do it that I know of and as another pipe is attached to it, which there always is in this system, you have two flanges to go through, and that makes the cheapest, the most economical, the strongest way to attach the end tie rod.

Q. Could the tie rod be attached at the upper portion of the flange or at the bottom of the flange?

A. It could be.

Q. It wouldn't matter really where you attach it?

A. It would matter; it would make a difference, but not a significant difference.

Q. No significant difference where it is attached?

A. Well, I wouldn't make it that broad.

Q. I think that is just what you said, Mr. Reinke, that there wouldn't be any significant difference?

A. What I am saying is that it is located at the most ideal location, one third up.

elements is an obvious step, where no inherent difficulties or deterrents are involved in making the step, where the new combination results in a natural phenomenon, even though all of the advantages were not foreseen, should not bring into play the introspective condemnation of using "hindsight." The test of obviousness, again, must turn upon a case by case analysis.

National Connector Corp. v. Malco Mfg. Co., 392 F.2d 766, 771 (8th Cir.), cert. denied, 393 U.S. 923 (1968).

Thus, the difference here, even when considered most favorably to Reinke, must be confined to the fact that Reinke used a better and different truss design than had been used before in irrigation systems; Reinke used better and different connecting devices than had been used before in irrigation systems; and Reinke achieved a longer span between drive units—without compromising other qualities—than had been achieved before in irrigation systems.

C. Level of Ordinary Skill in the Art

Testimony at the trial indicated that a person of ordinary skill in the structural arts in 1967 would have been a person "with somewhat more than elementary skills in and knowledge of the structural engineering arts who was conversant with irrigation equipment. Such person would have been aware of basic principles of truss design." *Reinke Mfg. Co. v. Sidney Mfg. Corp.*, *supra*, 446 F. Supp. at 1070.

The question that must be resolved is whether this hypothetical person of ordinary skill in the art could have created the Electrogator with the differences as noted in Part B, *supra*. If such an ordinary person could have achieved the advancements discussed, the Electrogator is not a patentable invention as anticipated by section 103.

As we stated in *University of Ill. Foundation v. Winegard Co.*, 402 F.2d 125, 127 (8th Cir. 1968), cert. denied, 394 U.S. 917 (1969), quoting *Atlantic Works v. Brady*, 107 U.S. 192, 199-200 (1882):

The process of development in manufactures creates a constant demand for new appliances, which the skill of ordinary head-workmen and engineers is generally adequate to devise, and which, indeed, are the natural and proper outgrowth of such development. Each step forward prepares the way for the next, and each is usually taken by spontaneous trials and attempts in a hundred different places. To grant to a single party a monopoly of every slight advance made, except where the exercise of invention, somewhat above ordinary mechanical or engineering skill, is distinctly shown, is unjust in principle and injurious in its consequences.¹⁰

As we stated before, the truss design in the Electrogator appears to be a better truss design than the Modified Mel Brown; the angle clip appears to be a better connecting device; and the attachment of the tension rods to the pipe in the Electrogator design appears to be a better way of connecting them. Because of these improvements, the span between the Electrogator drive units can be

10. For example, as the Supreme Court stated in *Busell Trimmer Co. v. Stevens*, 137 U.S. 423 (1890):

The most that can be said of [the patent before us] is that it shows * * * great industry in acquiring a thorough knowledge of what others had done in the attempt to trim shoe soles in a rapid and improved mode, by the various devices perfected by patents for that purpose, good judgment in selecting and combining the best of them, with no little mechanical skill in their application; but it presents no discoverable trace of the exercise of original thought.

Busell Trimmer Co. v. Stevens, *supra*, 137 U.S. at 435, quoted in *University of Ill. Foundation v. Winegard Co.*, 402 F.2d 125, 127 n.4 (8th Cir. 1968), cert. denied, 394 U.S. 917 (1969).

greater while still maintaining all other desirable features. Yet, the improvements and the results achieved by those improvements are no more than those which a "hypothetical person skilled in the art, who has thought about the subject matter of the patent invention in the light of that art" could have accomplished. *Flower City Architectural Metals v. Alpana Aluminum Prod., Inc.*, 454 F.2d 98, 108 (8th Cir. 1972).¹¹

There is substantial evidence to support the trial court's finding that the '826 and '953 patent claims in issue are invalid for reasons of obviousness. It is therefore unnecessary to reach the issue of infringement. We affirm.

A true copy.

Attest: /s/ Robert C. Tucker
Clerk, U. S. Court of Appeals,
Eighth Circuit.

11. Reinke argues that the testimony of the fabrication manager for Layne & Bowler (manufacturer of the Raincat), Mr. Walker, is in direct conflict with the trial court's finding of obviousness. Walker's testimony indicated that Layne & Bowler experimented with various truss designs in order to achieve a 120-foot span while still keeping other desirable features. Under the mandate of *Graham*, this "failure of others" is certainly a factor which may be considered as indicia of obviousness, *Graham v. John Deere Co.*, *supra*, 383 U.S. at 17-18. "But where, as here, the facts establish convincingly that the invention was obvious against the background of the relevant prior art, [this] cannot be controlling." *Cummins Engine Co. v. General Motors Corp.*, 299 F. Supp. 59, 89 (D. Md. 1969), *aff'd*, 424 F.2d 1368 (4th Cir. 1970), quoted in *Hadfield v. Ryan Equip. Co.*, 456 F.2d 1218, 1221 (8th Cir. 1972).

CONSTITUTIONAL AND STATUTORY PROVISIONS

1. Article I, Section 8, Clause 8, of the Constitution provides:

The Congress shall have Power . . .

. . .
To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries. . . .

2. Sections 101, 102, 103 and 112 of the Patent Code of 1952 provide (35 U.S.C. §§ 101-03, 112):

§ 101. Inventions patentable

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

§ 102. Conditions for patentability; novelty and loss of right to patent

A person shall be entitled to a patent unless—

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country more than one

year prior to the date of the application for patent in the United States, or

(c) he has abandoned the invention, or

(d) the invention was first patented or caused to be patented by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application filed more than twelve months before the filing of the application in the United States, or

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or

(f) he did not himself invent the subject matter sought to be patented, or

(g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

§ 103. Conditions for patentability; non-obvious subject matter

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

§ 112. Specification

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention. A claim may be written in independent or dependent form, and if in dependent form, it shall be construed to include all the limitations of the claim incorporated by reference into the dependent claim.

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.